EFFECTIVENESS OF IEC PACKAGE ON KNOWLEDGE AND UTILIZATION OF ICDS SERVICES AMONG MOTHERS IN SELECTED VILLAGES, KANYAKUMARI DISTRICT

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CERTIFICATE

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ABSTRACT

An experimental study was conducted to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakummari district.

True experimental, pre test post test control group design was adopted for this study. Survey was conducted by using the survey form to identify the mothers who have under five children. Random sampling technique was used to select 60 samples, out of which 30 samples for study group and 30 samples for control group. The questioner on knowledge and rating scale for utilization was used to collect data. For the study group the investigator gave IEC package after pre test. The researcher categorized the group into three to give IEC package. Then the post test was conducted at the 22^{nd} day for both study and control group.

The findings revealed that, during pre test, in Study group 2(6.67%) had inadequate level of knowledge, 18(60%) had moderate level of knowledge, and 10(33.33%) had adequate level of knowledge. In Control group, 7(23.33%) had inadequate level of knowledge, 20 (66.67%) had moderate level of knowledge and 3(10%) had adequate level of knowledge. In the utilization in Study group 5(16.67%) had no utilization, 22(73.33%) had partial utilization, and 3(10%) had full utilization and in Control group, 3(10%) had no utilization, 27(90%) had partial utilization and none of them had full utilization. During post test, in Study group, none of them had inadequate level of knowledge, 11(36.67%) had moderate level of knowledge and 19(63.33%) had adequate level of knowledge and in Control group, 6(20%) had inadequate level of knowledge, 21(70%) had moderate level of knowledge, 3(10%) had adequate level of knowledge. Based on the utilization in Study group none of them had no utilization, 26(86.67%) had partial utilization, and 4(13.33%) had full utilization and in control group, 5(16.67%) had no utilization, 25(83.33%) had partial utilization and none of them had full utilization.

The paired‘t’ value in the study group for the level knowledge was 10.45***** which is significant at $p < 0.05$ and for the utilization it was 5.7^{*} which is significant at $p < 0.05$ It shows that IEC package was effective in increasing

the level of knowledge and utilization. Hence the research hypothesis (H_1) is accepted.

The unpaired 't' value for study and control group was 8.67* for knowledge and 2.47* for utilization which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the level of knowledge and utilization. Hence the research hypothesis (H_2) is accepted.

The correlation between the level of knowledge and utilization in the study group is 0.508 in pre test and 0.416 in post test. Hence the hypothesis H_3 is accepted.

There was no significant association in between the post test level of knowledge and utilization with their demographic variables. Hence research hypothesis H_4 is not accepted.

CHAPTER-I

INTRODUCTION

The children of today are the citizens of tomorrow. This powerful statement assumes special significance in our context as children comprise one third of the total population in the country. Every child on provision of a conducive and an enabling environment, may blossom into an ever fragrant flower to shine in all spheres of life. This reminds us of the onerous responsibility that we have to mould and shape their present conditions in the best possible way.

Recognition of childhood as a state different from adulthood began to emerge in the 16th and 17th centuries. In the middle Ages, children were portrayed in art as miniature adults with no childish characteristics. Society began to relate to the child not as a miniature adult but as a person of a lower level of maturity needing adult protection, love and nurturing. In the 16th century, images of children began to acquire a distinct childish appearance. From the late 17th century onwards, children were shown playing. Toys and literature for children also began to develop at this time.

The journey in the life cycle of a child involves the critical components of child survival, child development and child protection. Child participation which envisages their active involvement and say in the entire process adds a new dimension. Child survival entails their basic right of being born in a safe and non-discriminatory environment and grows through the formative years of life in a healthy and dignified way. Reducing the level of malnutrition and micronutrient deficiency and increasing enrolment, retention, achievement and completion rates in education are the focus areas in child development. Safeguarding the children from violence, exploitation and abuse fall under child protection.

Nutrition is related to both the quantitative and qualitative supply of food elements such as proteins, fats, carbohydrates, minerals and vitamins. If these essential nutrients are received in the balanced amount necessary to sustain life, to allow for energy expenditure, and to promote growth and development, the child is well nourished. The nutritional needs of a child depend on the age, sex, rate of growth and level of activity.

During periods of rapid growth, such as the prenatal period, infancy, puberty, and adolescence, the need for protein and calories is increased. At any stage the caloric intake must be sufficient to cover both the needs for growth and the expenditure of energy. The effect of inadequate nutrition is especially apparent when the child is growing rapidly. The causes of under nutrition include and inadequate nutritional intake both qualitatively and quantitatively, physical hyperactivity or lack of adequate rest, a physical illness that causes an increase in nutritional need.

Background of the study

India is home to the largest number of children in the world. The country has 20 per cent of the 0- 4 years‟ child population of the world. India, with 1.28 billion people is the second most populous country in the world. Every year, an estimated 26 millions of children are born in India. It is significant that while an absolute increase of 181 million in the country‟s population has been recorded during the decade 2001-2011, there is a reduction of 5.05 millions in the population of children aged 0-6 years during this period. The share of Children (0-6 years) in the total population has showed a decline of 2.8 points in 2011, compared to Census 2001.

Malnutrition is the condition that results from eating a diet in which certain nutrients are lacking, or in excess (too high in intake), or in the wrong proportions. Malnutrition is technically a category of diseases that includes under nutrition, obesity and over weight, and micronutrient deficiency among others.

Malnutrition in children is not affected by food intake alone; it is also influenced by access to health services, quality of care for the child and pregnant mother as well as good hygiene practices. Girls are more at risk of malnutrition than boys because of their lower social status. Malnutrition in early childhood has serious, long-term consequences because it impedes motor, sensory, cognitive, social and emotional development. Malnourished children are less likely to perform well in school and more likely to grow into malnourished adults, at greater risk of disease and early death. One in every three malnourished children in the world lives in India**.** In India, around 46 per cent of children below the age of three are too small for their age, 47 per cent are underweight and 16 per cent are wasted. Many of these children are severely malnourished. The prevalence of malnutrition varies across

states, with Madhya Pradesh recording the highest rate (55 per cent) and Kerala among the lowest (27 per cent).

The 2011 census estimates the population of children below 6 years at 158.8 million. Nearly 40 % of these children are undernourished that is more than 63 million children are suffering from malnutrition. Nutritional problems are substantial in every State in India. The proportion of children under the age of five years who are underweight was lowest in Sikkim (19.7%) followed by Mizoram (19.9%). The States with more than 50 percent children under five years of age underweight are Madhya Pradesh (60%), Jharkhand (56.5%) and Bihar (55.9%). The other states where 40 percent to 50% of children are underweight are Meghalaya, Chhattisgarh, Gujarat, Uttar Pradesh, and Orissa. Stunting was more prevalent in Uttar Pradesh (56.8%), Bihar (55.6%), and Meghalaya (55.1%) than the other states. Wasting is most common in Madhya Pradesh (35%), Jharkhand (32%), and Meghalaya (31%). These results revealed that, the severity of child malnutrition varies across States.

The trend in the Nutritional Status of Children 6-36 months in the last two decades are as follows. In the year 1990, 42.2%were grade I malnutrition and 29.6% were grade II and 4.2%were grade III malnutrition. In the year 2000 36.6% were grade I and 7.49% were grade II and 0.21% were grade III malnutrition. In the year 2010, 34.27% were grade I and 1.62% were grade II and 0.03%were grade III malnutrition.

Integrated Child Development Services is today the largest community based outreach programme for holistic early child development. It is a crucial link between disadvantaged communities both the primary health care and education systems. ICDS scheme is a pioneer scheme taking care of the Mother and Child. This Scheme in Tamil Nadu has improved overall nutrition and health status of its young children.

The vision of the ICDS is working towards making Tamil Nadu a Malnutrition Free State, which focus on prevention of malnutrition. This was launched on 2nd October 1975. Today, ICDS Scheme represents one of the world's largest and most unique programmes for early childhood development. ICDS is the foremost symbol of India's commitment to her children. The main objectives are to improve the nutritional and health status of children in the age-group 0-6 years, to lay the

foundation for proper psychological, physical and social development of the child, to reduce the incidence of mortality, morbidity, malnutrition and school dropout, to achieve effective co-ordination of policy and implementation amongst the various departments to promote child development and to enhance the capability of the mother to look after the normal health and nutritional needs of the child through proper nutrition and health education.

Beneficiaries as on march 2010 in Tamil Nadu are 251844 children belonging to 6-12 months, 506727 children belonging to the age group 1-2 years, 459956 children in the age group of 2-3 years, 666580 children in the age group of 3-5 years, 538582 Pregnant Women/ Lactating Mothers, and 24667 Old Age Pensioners. The package of services delivered at Anganwadi centers are growth promotion, Universal Supplementary nutrition, Early Childhood care and Pre-School education, Nutrition and Health education, health services by health personnel (Village Health Nurse/ Medical Officer) and referral services

In India almost half of the children under five years of age (48 %) are stunted and 43% are underweight. The proportion of children who are severely undernourished is also notable. 24 % of the children are severely stunted and 16 % are severely underweight. Moreover 20 % of under five children are affected with wasting in India and very few children under five years of age are overweight.

Girls and boys are equally likely to be undernourished. Under nutrition is generally lower for first births than for subsequent births, and increases consistently with increasing birth order for all measures of nutritional status. Short birth intervals are associated with higher levels of stunting and underweight. Under nutrition is substantially higher in rural areas than in urban areas. Even in urban areas, however, 40 percent of children are stunted and 33 percent are underweight. Inadequate nutrition is a problem throughout India, but under nutrition is most pronounced in Madhya Pradesh, Bihar, and Jharkhand. Nutritional problems are also substantially higher than average in Meghalaya and stunting in Uttar Pradesh. Nutritional problems are least evident in Mizoram, Sikkim, Manipur, and Kerala, and relatively low levels of under nutrition are also notable in Goa and Punjab.

Significance and need for the study

If children are healthy, future generation will be healthy resulting in a healthy Nation. One of the important factors in determining a child‟s health is the pattern of his growth and development, which extends throughout their life cycle.

The average Indian child has a poor start to life. Both infant and under-five mortality rates for Indian children is 67 and 93 respectively and it is higher than the other developing countries. One in four newborns is underweight. Only about one in three is exclusively breastfed for the first six months. Nearly one in two under five children suffers from moderate or severe malnutrition. One in three children does not get a full course of DPT (diphtheria, pertussis and tetanus immunization), and one in three has the opportunity to be in an early learning programme. One in five is protected against vitamin A deficiency.

In world over 105 million out of 6 billion people are under five children, and over 10.5 million deaths occur each year among under five children out of which 22 percentage takes place in India. Two third of these death occur during the first year of life and closely associated with poor breast feeding, improper nutritional supply, lack of care by the parents. . More than 50% of death in the age group of 0- 4 years is associated with malnutrition. The most vulnerable period for malnutrition is the first 3 years.

Against this backdrop, the Government has supported a monumental effort to improve the life chances of children. Integrated Child Development Services (ICDS) in India is the world‟s largest integrated early childhood programme, with over 40,000 centers nationwide. Since its inception in 1975, the programme has matured and expanded, despite difficulties in adapting to the vastly different local circumstances found on the Indian subcontinent. UNICEF helped to launch the ICDS programme and continues to provide financial and technical assistance along with the World Bank.

In the year 2007, Thakur, J.S et al conducted a study to assess the impact of Integrated Child Development Services (ICDS) on childhood under nutrition. A total of 803 under-five children were recruited for the study. Findings of present study

were compared with another methodologically similar study (1997) from Chandigarh and Reproductive and Child Health Rapid Household Survey (1998) to draw decadal trends. Prevalence of underweight among under-five children remained almost stagnant in the last one decade from 51.6% (1997) to 50.4% (2007). There was insignificant difference (*P*=0.3) in prevalence of underweight among children registered under ICDS program (52.1%) and those not registered (48.4%) in 2007. Health services utilization was poorest in urban slums.

In the year 2006, Jyothi B conducted a comparative study to find out the health status of under five children ICDS and non ICDS area in Konanakunte, South Bangalore. Using descriptive survey method 50 under five children from ICDS and 50 under five children from non- ICDS area were selected as the mothers. The study revealed that there was significant difference between the health status of the children from ICDS and non- ICDS area at 0.001 level of significance (t value=6.44)

Favorable impact of ICDS services was proportionally better in the first year than in the fourth year of the service. In India mothers are the one who wholly and solely takes care of children. So the mothers should have adequate knowledge regarding ICDS scheme in order to reduce the child morbidity, mortality, malnutrition, under weight and for happy growth of the child.

The government of India is committed to child development as a policy priority and is steadily expanding ICDS programme with the ultimate aim of reaching every child under the age of 6 years before the turn of the century. The impact on the lives of children is evident in several crucial indications, increased birth weight, reduced incidence of malnutrition, increased immunization coverage, and reduced infant and child mortality rate in area covered by the ICDS scheme. The ICDS programme has provided improved services, but it has failed to fully accomplish the intended goals, partly because of the lack of community participation.

Based on the above research studies and personal experience in rural area the investigator found that, most of the under five children are malnourished and mothers had lack of knowledge regarding ICDS scheme. This motivated the investigator to conduct a study regarding ICDS scheme among mothers of under five children in rural areas.

Statement of problem

An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected villages, Kanyakummari district.

Objectives of the study

- To assess and compare the pre and post test level of knowledge and utilization on ICDS services among mothers in study and control group.
- To evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in study group
- To correlate the utilization of ICDS services and knowledge on ICDS services among mothers in study and control group.
- To associate the post test level of knowledge on ICDS services with their selected demographic variables in study and control group.

Research hypothesis

H_1 - There is a significant difference between the pre and post test level of knowledge and utilization on ICDS services among mothers in study group.

H_2 - There is a significant difference in post test level of knowledge and utilization on ICDS services among mothers in study group and control group.

H_3 - There is a relationship between the utilization and knowledge of mothers on ICDS services in study group and control group.

H_4 - There is a significant association between the post test level of knowledge and utilization on ICDS among mothers with selected demographic variables in study group and control group.

Assumption

Mother‟s knowledge and utilization of ICDS services may increase after using IEC package on ICDS.

Operational definitions

1. **Evaluate:**

   Evaluation refers to the identification of difference between the pretest and post test level of knowledge and utilization of ICDS services among mothers and judging the effectiveness of IEC package on ICDS services by the questioner on knowledge and rating scale on utilization status.

2. **Effectiveness:**

   Effectiveness refers to the significant change in the level of knowledge and utilization among mothers who have under five children in study group and can be measured by comparing with control group.

3. **IEC package:**

   IEC package is an educational strategy including objectives, expansion and services provided in ICDS services, which is provided through flash cards and booklet, which is used to increase the knowledge and utilization of ICDS services which is prepared by the researcher.

4. **Knowledge:**

   It is the awareness of the ICDS services among the mothers who have under five children as measured by the questioner on knowledge of ICDS services which is prepared by the researcher.

5. **Utilization:**

   It is making use of the available resources through ICDS services as measured by the rating scale on utilization of ICDS services which is prepared by the researcher.

6. **ICDS services:**

   It is an integrated child development scheme to improve the nutritional and health status of children from 0 to 6 years of age which is implemented through Anganwadi centre.

7. **Mothers:**

   It refers to the mothers who have under five children.

Delimitations

The study is delimited to

- a period of 4 weeks.
- mothers who have children from 2 to 5 years

Projected outcome

The finding of the study will help the public health workers to increase the use of IEC package in imparting knowledge and promoting the utilization.

Conceptual framework

Imogene M. King was born in 1923, the youngest of three children. She received her basic nursing education from St. John‟s Hospital School of Nursing in St. Louis, Missouri, in 1946. She did her BS in nursing education in 1948 and MS in nursing in 1958 from St. Louis University and her Ed D (1961) is from Teachers College, Columbia University, New York. She has done postdoctoral study in research design, statistics, and computers.

The purposes of the conceptual framework are to organize concepts that represent essential knowledge that might be used by many disciplines and construct theories from the framework and test them from the perspective of nursing as a discipline. It includes goal, structure, function, resources, and decision making, which King says are essential elements. The framework has health as the goal for nursing.

Kings theory of goal attainment

The major elements of the theory of goal attainment are seen “in the interpersonal systems in which two people, who are usually strangers, come together in a health care organization to help and to be helped to maintain a state of health that permits functioning in roles.” The concepts of the theory are as follows.

Perception: The nurse perceived the level of knowledge and utilization of ICDS among the mothers who have under five children in both the study and control

group. The participants perceived their level of knowledge and utilization of ICDS among themselves through answering the pre test questioner.

Action is defined as a sequence of behaviour involving mental and physical action. The sequence is first mental action to recognize the presenting conditions then physical action to begin activities related to those conditions and finally mental action in an effort to exert control over situation, combined with physical action seeking to achieve goals. Here the researcher possesses readiness to provide IEC package for the participants in the study group. The participants were ready to receive intervention.

Reaction is not specifically defined but might be considered to be included in the sequence of behavior described in action. The researcher provides IEC package and appreciated the participation and the participants are participating in the IEC programme and accepting the concept.

Interaction is a process of perception and communication between person and environment and between person and person represented by verbal and nonverbal behaviors, which are goal directed. Here the researcher monitored the level of knowledge and utilization for the participants from both the study and control group.

Transaction is a process of intervention in which human beings communicate with the environment to achieve goals that are valued. Transactions are goal-directed human behavior. The level of knowledge and the utilization has increased.

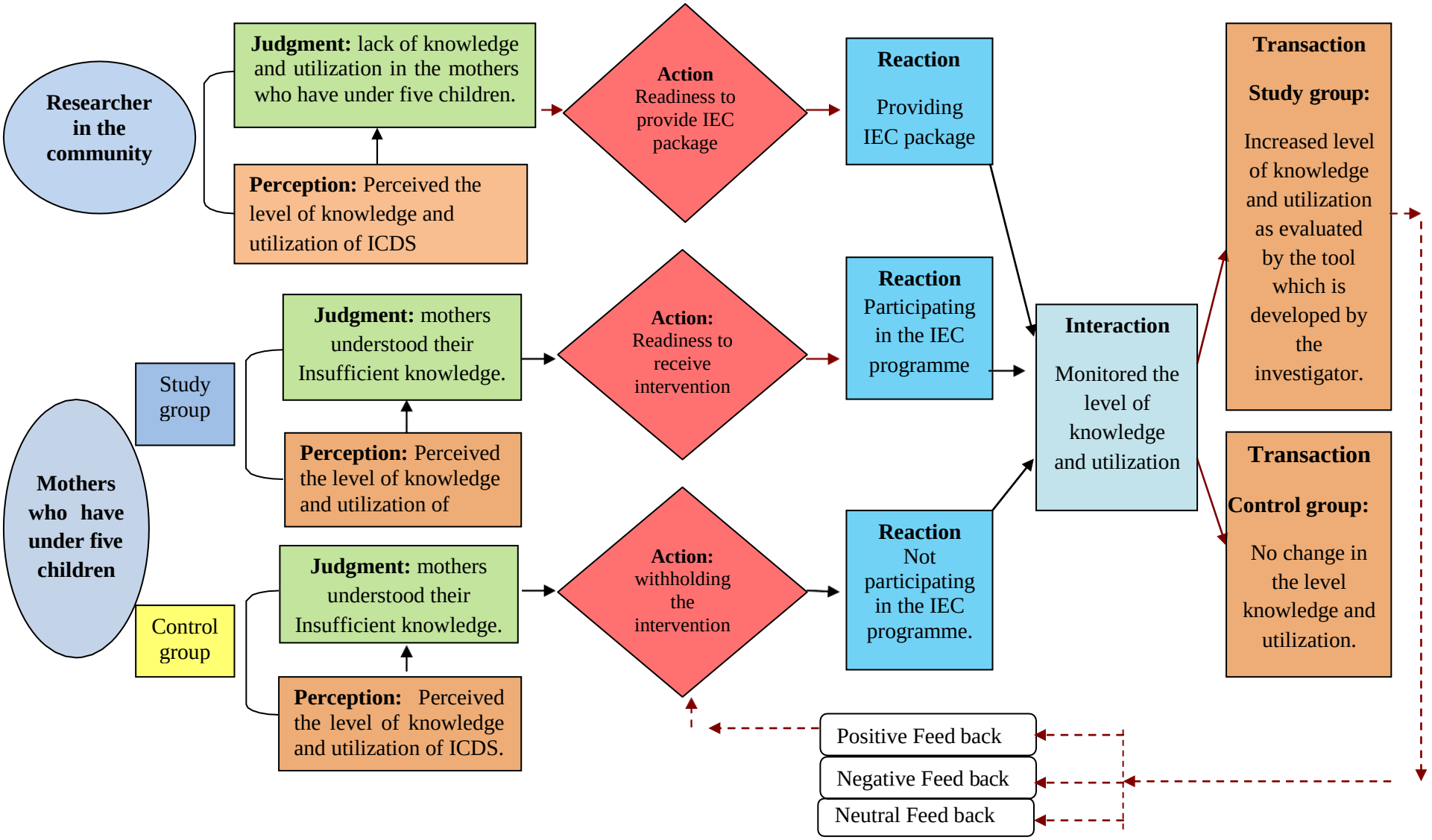

Fig.1.1. Conceptual Frame Work Based on Imogene Kings Goal Attainment Theory (1981)

CHAPTER II

REVIEW OF LITERATURE

Review of literature is defined as the broad comprehensive, in-depth, systemic, and critical review of the scholarly publication, unpublished scholarly print materials, audio visual materials and personal communications. Review of literature is a key step in the research process. Review of literature refers to an extensive, exhaustive and the systematic examination of the publications relevant to the research project. One of the most satisfying aspects of the research review is the contribution it makes to the new knowledge, insight and general scholarship of the researchers.

The review of literature is divided into three sections:

Section A: Studies related to the ICDS scheme.

Section B: Studies related to the knowledge and utilization of mothers of children regarding ICDS scheme.

Section C: Studies related to effectiveness of IEC package regarding ICDS scheme.

Section A: Studies related to the ICDS scheme among children.

Sampath, T (2008) from Loyola College, conducted a study in Chennai to evaluate the status of community participation and obstacles to community participation, in ICDS programme. A total of 180 respondents including 40 anganwadi workers (AWWs), 26 anganwadi helpers (AWHs), 36 mothers, 24 members of self help groups (SHGs) and 26 AGs were selected for the study. Data was gathered through focus group discussions, interviews and questionnaires. Only 16% mothers and 2% members of self help groups participated to the extent of 80-100% in the ICDS programme. It was found that ICDS staff had inadequate knowledge about the basic concept of community participation, and the community too.

Vinnarasan, A (2007) from Loyola College, conducted a survey to evaluate the factors influencing non-enrollment of children in Anganwadi

centers functioning under Chennai Corporation. This study was carried out in the eleventh project of ICDS, which consists of 88 AWCs situated in Adyar, Besant Nagar, Mandaiveli, Santhome, Kotturpuram and Pattinapakkam. A total of 150 non enrolled children aged 2 1/2 years to 5 years residing in ICDS area were selected for the study and information was gathered from their mothers. It was found that 40% respondents were not availing any kind of child care services. Among the participants who were availing non-ICDS child care services, 84.4% were receiving services from private players.

Balsekar, A et al (2007) from Institute of Social Sciences, Thiruvananthapuram, conducted a survey to examine the performance of programmes. This was conducted in two blocks in Thiruvananthapuram district of Kerala where five Anganwadi centers were selected from each block. Total population was 41,788, out of which 2368 were 0-3 years, 2265 were children aged 3-6 years, 181 were pregnant women, 271 were lactating women 3000 were adolescent girls. Data was collected from monthly progress reports of AWCs and consolidated at the Child Development Project Office level. It was found that only 29.4% of the BPL children were coming to the Anganwadi, and a large proportion was going to private nurseries. But for immunization and other health related activities, they were brought to the Anganwadi centers.

FORCES (Forum for Creche and Child Care Services), (2007) undertook a study to ascertain the status of ICDS services in Hayatnagar district of Andhra Pradesh. A total of 154 Anganwadies, 17,073 children below the age of 6 years, and 2983 pregnant and lactating mothers were covered. Data was collected through interviews and field survey. It was found that mother beneficiaries were aware of their rights, and the functionaries were knowledgeable and responsible for their tasks. Functionaries mentioned that 100% immunization was taking place in the district. 99% deliveries had been conducted by ANMs.

Bose. K et al (2007) investigated the age and sex variations in height and weight, among rural children of Bengalee ethnicity at 11 Integrated Child Development Services centers of Nadia District, West Bengal, India. 533 mothers among 3- to 5-year-old were selected for the study. Height-for-age,

weight-for-age and weight-for-height were used to evaluate stunting, underweight and wasting, respectively by following the National Centre for Health Statistics Guidelines. The overall rates of stunting, underweight and wasting were 23.9%, 31.0% and 9.4%, respectively. The rate of underweight was higher among girls, which is 35.1% than boys 26.5% and wasting is also higher among girls 12.2% when compared with boys which is 6.3%. In general, the frequency of stunting increased with increasing age in both sexes. Based on the World Health Organization classification of severity of malnutrition, the overall prevalence of underweight was 30%, stunting was 20-29%, and wasting was 5-9%. In conclusion, the nutritional status of the subjects is unsatisfactory.

Thakur J.S, et al (2007) conducted a study to find out the decadal trend in childhood nutritional status between 1997 and 2007 in Chandigarh in India and to assess the impact of Integrated Child Development Services (ICDS) on childhood under nutrition. A total of 803 under-five children were recruited for the study. Findings of present study were compared with another methodologically similar study which was done in the year 1997 from Chandigarh and Reproductive and Child Health Rapid Household Survey in 1998, to draw decadal trends. Prevalence of underweight among under-five children remained almost stagnant in the last one decade from 51.6% in the year 1997 to 50.4% in the year 2007. There was insignificant difference (P=0.3) in prevalence of underweight among children registered under ICDS program which is 52.1% and those not registered which is 48.4% in 2007. Health services utilization was poorest in urban slums.

Biswas, A.B et al (2007) conducted a a cross-sectional community based study to assess the Awareness and perception of mothers about functioning and different services of ICDS in two districts of West Bengal. A total of 1235 mothers were included as study subjects. As per opinion of the mothers 73% reported that Anganwadi centers opened regularly, 71.6% said that behavior of the Anganwadi workers was friendly and 63% mothers opined that ICDS is beneficial to their children. 84.2% mothers were aware of any ICDS services. Quantity and quality of supplementary food was acceptable to 88% and 72.7% mothers respectively. 79.2% and 87.5% mothers did not receive any advice on child feeding and growth chart. Making beneficiaries

aware about services by targeted interventions will ensure better utilization of ICDS.

Dash, N.C et al (2006) from centre for Rural Development, conducted an evaluation study to assess the Nutritional Health and Pre-School Education Status of Children Covered under the ICDS Scheme in Orissa. The study was conducted in six districts of Orissa namely, Khurda, Cuttack, Nayagarh, Puri, Kandhamal and Rayagada. 43 AWCs comprising 12 rural, 14 urban and 17 tribal were selected. The mothers consisted of 1200 beneficiaries, 61 ICDS functionaries, 30 health functionaries, and 108 representatives of the concerned communities. Data was gathered through interviews and observation methods. It was found that 56.08% of the respondents were illiterate, and only 3.67% had educational qualifications above high school level. 79% illiteracy was observed in case of the tribal mothers. It was found that in the scale of educational achievement, tribals lag far behind the rural and urban mothers.

Socio-Economic and Educational Development Society (SEEDS) (2005) evaluated the implementation of the ICDS programme in Haryana. Two blocks from each of the four districts were selected, namely Ambala, Fatehabad, Rohtak and Gurgaon. 32 AWCs were covered and a total of 725 beneficiaries were Mothersd, in which 131 lactating mothers, 127 expectant mothers, 65 children were between 0-6 months, 241 children were between 6 months to 3 years, 161 children were between 3-6 years, and 131 others were covered. Data was collected through field survey, and qualitative data was gathered from secondary sources. 64.4% were children up to 6 years of age 35.6% were lactating and pregnant women. There were no adolescent girl beneficiaries in the Mothersd districts. It was revealed that 83% of the families were getting Supplementary Nutrition. 77% of them mentioned that Supplementary Nutrition supplied was good, 11% felt it was satisfactory and 7% said that the quality was poor.

Socio-Economic and Educational Development Society (SEEDS) (2005) conducted the study to evaluate the implementation of the ICDS programme in Himachal Pradesh. This study was conducted in 4 districts of Himachal Pradesh namely Kinnaur, Kullu, Solan and Una. A total of 456

beneficiaries were selected in 32 Anganwadi centers. The mothers are 59 lactating mothers, 56 expectant mothers, 38 children 0-6 months, 162 children were between 6 months to 3 years, and 141 children were between 3-6 years. Data was collected through field survey and qualitative data was gathered mostly from secondary sources. It was found that children formed the major part of the beneficiaries as children in the age group of 6 months to 3 years constituted 35.53% of the total beneficiaries, followed by children in the age group of 3-6 years (30.92%), and children below 6 months (8.33%). Lactating and expectant mothers were about 25% of the total beneficiaries.

Devender, B (2001) from the National Council of Applied Economic Research carried out a nation wide evaluation of ICDS projects. This study covered almost 90% of the country‟s population in all the States and Union Territories. Nearly 4000 projects, 60,000 AWCs, 4000 Mukhya Sevikas and 1.80 lakhs beneficiary households with children in the age group of 0-1 year, 1-3 years and 3-6 years were selected. Data was collected through field survey. It was found that on an average, nearly 66% of the eligible children and 75% of the eligible women were registered at AWCs. In India, severe malnutrition (Grade III and Grade IV) was 1.3% among children aged 6-12 months, 3.6% among children aged 13-36 months, and 1.4 % among children aged 37-72 months.

Bhasin, S.K et al (2001) conducted a study to assess the Long-term nutritional effects of ICDS from Department of Community Medicine, UCMS & GTB Hospital in Shahdara in Delhi. Nutritional status of 1243 children among which 636 were boys and 607 were girls in the age group of 7-13 years was assessed in relation to utilisation of Integrated Child Development Services (ICDS) during their childhood. Information regarding utilisation of ICDS facilities, socio- demographic details and general awareness. was collected by interview technique and anthropometric and clinical examination of every child was done and Anganwadi attendance score was calculated for each child. On univariate analysis Anganwadi attendance score, age, sex of the child and education status of the father showed statistically significant association ($p < 0.005$) with malnutrition. On Multiple logistic regression analysis higher age and being female remained significant risk factors for

development of malnutrition for all grades. Anganwadi attendance score did not show any statistically significant association for decreasing the risk of getting malnourished for any grades of malnutrition in 7-13 years age group

Swami, H.M et al (2001) did a study to assess the Nutritional status of pre-school children in an integrated child development service (ICDS) block of Chandigarh from Department of Community Medicine, Government Medical College, Chandigarh. Nutritional status of 1286 pre-school children were assessed. They were selected by a stratified random sampling from urban, rural and slum areas of Chandigarh and were assessed by weight for age criteria by making domiciliary visits. The overall prevalence of protein energy malnutrition (PEM) was found to be 51.6% while 65.4% had grade I, 26.3% had grade II, 5.3% had grade III and 3% of children had grades IV PEM. The prevalence of malnutrition significantly increased with increase in age till 3rd year, then started declining ($P<0.001$). The prevalence of PEM was significantly higher among Integrated Child Development Service (ICDS) beneficiaries which is 53.8% than non-ICDS beneficiaries which is 46.9% $P<0.05$. More attention and better impetus are required to be given to improve the nutritional status of pre-school children in Chandigarh.

Indian Institute of Health Management Research, (2000) conducted a survey in Rajasthan to collect baseline information about the nutritional and health status of children aged 0-6 years, pregnant and lactating women and adolescent girls after launching world Bank Assisted ICDS – III Project. The study was conducted in 20 districts. The samples were a total of 94 Anganwadi centers, out of which 21,013 children in the age group of 0-6 years, 1223 pregnant women, 7253 lactating mothers, 4190 non pregnant non lactating (NPNL) women and 3410 adolescent girls (AGs). Data was gathered through interviews and field survey. The result showed nearly 14% children in the age group 0-3 years, and about 13% children aged 3-6 years were severely malnourished. About 23% children aged 0-3 years were underweight and in the age group 3-6 years 24% children were underweight.

Banerjee, S (1999) from school of social work conducted a survey to find out the areas where and how better community participation can be ensured to run the ICDS programme smoothly at north Kolkata. Only one

centre of ICDS was selected, which was run by Ramkrishna Mission Loka Shiksha Parishad. Out of 854 population 30 cases were taken for in-depth study. Out of 15 respondent mothers, 7 reported correctly about the services rendered under the programme for their children. Mothers‟ awareness was higher than that of fathers as the mothers were closely related with their children. Out of 15 respondents 13 reported that they knew all about the services as they visited the centres frequently and attended the Mothers‟ Day meetings. 2 respondent fathers did not know anything about the services provided at AWCs and they knew only that their children were provided food at the centre.

Section B: A studies related to the knowledge and utilization of mothers of children regarding ICDS scheme.

Jitendra, et al (2013) from Government Medical College, Latur, Maharashtra, conducted a comparative cross-sectional study at anganwadies in urban and rural blocks of Latur district. Results showed that out of the total 506 children examined 252 were from urban (Latur-Udgir) block and 254 from rural (Nilanga) block. Utilization of supplementary nutrition was more in urban area (48.03%) than rural area (37.7%) with significant statistical difference. Non formal preschool education service utilization was more in urban area. Whereas immunization, health checkup service, vitamin A prophylaxis and IFA supplementation was more in rural area. Percentage of malnourished children was 46.46% and 55.56% in urban and rural area respectively with statistical significant difference. They concluded that utilization of supplementary nutrition and non formal preschool education was more in urban area. Utilization of immunization, vitamin A prophylaxis, IFA supplementation and health checkup service was more in rural area.

Jawahar, et al (2011) conducted a study to assess the the knowledge and utilization of Integrated Child Development Scheme (ICDS) services among women. A sample size of 225 women from Udupi were selected for the study. The results revealed that 49.3% had average knowledge and 46.7% with poor knowledge regarding ICDS. Among pregnant women there was 74.1%

utilization of supplementary nutrition and 7.4% utilization of immunization. Among lactating mothers there was 76.2% utilization of supplementary nutrition, 4.8% utilization of health education. Mothers having children revealed that, there was 71.1% utilization of supplementary nutrition, 58.3% utilization of health checkup, 69.3% utilization of non-formal preschool education, 26.7% full and 50.5% partial utilization of immunization services. The main reason for not utilizing ICDS services were due to household work (43%), distance from anganwadi (40%) and due to lack of awareness (13%). They concluded that accurate information and encouragement from health personnel will further help to improve the knowledge and utilization of ICDS services.

Madhavi, et al (2009) did a cross sectional study to obtain a feed-back regarding beneficiaries-satisfaction and utilization of services by registered beneficiaries of Integrated Child Development Services in Rural area. The study was conducted in 15 Anganwadi Centers from 15-01-2009 to 16-04-2009. There were 3958 beneficiaries. They were categorized into five groups such as Pregnant Women, Lactating Women, Women in Reproductive age-group (15-45 years), Mothers of 0-3 years children, Mothers of 3-6 years. Beneficiary satisfaction and utilization of services were assessed by interview, verification of records, logistic supply and infrastructure. Study revealed that utilization of ICDS scheme was high in pregnant women (90.83%). All children between 0-3 years were getting Vitamin-A supplementation. Beneficiary satisfaction was high (81.11%) among 15-45 years women. To improve quality of ICDS scheme one needs to strengthen the „Information,

Trivedi, S et al (1993) conducted a door to door survey to evaluate the utilization of nutritional and immunization services in children one to six years of age in a rural block of central India. The evaluation was undertaken in the rural ICDS block Sanwer in Madhya Pradesh where the project is functioning from last 3 years in six Anganwadi areas in ICDS block and five randomly selected matched non ICDS rural area served as controls. There were a total of 709 children in ICDS and 500 in non ICDS block in 1-6 years age group. The difference was not statistically significant for nutritional status in the two blocks, but a remarkably better immunization status was observed in non

ICDS block. The coverage for DPT (3 doses), and measles vaccination in ICDS block was 79.57% and 45.7%, respectively, while in non ICDS block it was 94.4% and 62.03%, respectively. It seems the ICDS scheme is under utilized by the community and requires immediate attention by the health authorities.

Singh, A (1992) conducted an evaluation survey (1991-92) on utilization and awareness of ICDS services among pregnant and lactating women. It revealed that in subcentre areas beneficiaries were less aware of location and staff of anganwadi centre (AWC) and that they visited AWC less often as compared to their counterparts in non-subcentre areas. More beneficiaries in subcentre area said that immunization services provided by AWC were inadequate as compared to the responses in non-subcentre area.

Section C: Studies related to effectiveness of structured teaching Programme regarding ICDS scheme.

Sunny, T (2012) conducted a study to assess the effectiveness of structured teaching programme on knowledge regarding ICDS Programme among the mothers who have under five children at uttarahalli village in Bangalore. 60 mothers were selected. The findings showed that the mean post test knowledge score of the subjects in the study group was 65.39%. It is higher than the mean pretest score of 45.98%. The demographic variables such as age, educational status and source of information show a significant association with post test level of knowledge. Findings of the study indicate Structured Teaching Programme was significantly effective in improving the knowledge score of mother of under five children regarding ICDS programme.

CHAPTER-III

RESEARCH METHODOLOGY

Research methodology refers to the techniques used to structure the study and to gather and analyze information in a systematic fashion .This chapter dealt with the methodology adopted for this study and includes the research design, setting, mothers and sampling method.

Research approach

The researcher adopted quantitative research approach.

Research design

True – Experimental, pre test post test control group design was adapted to this study.

GROUP	PRE TEST	INTERVENTION	POST TEST
R--Study	O1	X(IEC package)	O2
R-- Control	O1		O2

O1 - Assessment of knowledge and utilization of ICDS services before intervention

X - IEC package on ICDS services.

O2 - Assessment of knowledge and utilization of ICDS services after intervention.

R - Randomization.

Variables

Independent variable **:** IEC package on ICDS services.

Dependent variable **:** knowledge and utilization.

Settings

The study was conducted among mothers who have under five children in Madathattuvilai village which is 5 kilometer far from St. Xavier‟s Catholic College of Nursing for study group. Among 130 mothers the researcher selected 30 mothers who have under five children who were willing to participate, for the study group. For the control group the researcher selected 30 samples out of 95 samples from Kandanvilai village which is 10 kilometer far from the college in Kanyakumari district.

Population

Target population

The target population includes all the mothers who have under five children.

Accessible population

The accessible population of the study includes the mothers who have under five children residing in Madathattuvilai and Kandanvilai village in Kanyakumari district.

Samples

Mothers who have under five children who were residing in Madathattuvilaia village and Kandanvilai who fulfilled the inclusion criteria.

Samples size

Samples size was 60, out of which 30 mothers in the control group and 30 mothers in the study group.

Sampling technique

Random sampling technique was used for selecting mothers

Criteria for Samples selection

Inclusion criteria

Mothers who had under five children

Mothers who were residing in madathattuvilai village and kandanvilai village

Exclusion criteria

Mothers who had children below two years.

Mothers who were not available at the time of data collection.

Description of Tool:

The tool used consist of 4 sections

Part I : Survey form

It includes Name of the mother, Name of the child, Age of the child, Number of children in the family and address

Part II: Demographic variables

It includes age of the mother, age and sex of the child, birth order of the child, type of the family, family income per month, educational status of father and mother and occupational status of father and mother.

Part III: Questionnaire on knowledge of ICDS Services

It includes 20 questions to check the knowledge of the mother on ICDS services. The knowledge status was scored as follows

Each correct answer carries one mark and the wrong answer caries 0 mark. The score was interpreted as follows.

i. 1-10 : inadequate level of knowledge,
ii. 11-15 : moderate level of knowledge
iii. 16-20 : adequate level of knowledge

Part IV: Check list on utilization status

It includes 20 items to check the utilization status of the mother

The utilization status was scored as follows:

Always	: 4 marks
Frequently	: 3 marks
Occasionally	: 2 marks
Seldom	: 1 mark

The score was interpreted as follows

i. 1-31 : no utilization
ii. 32-59 : partial utilization
iii. 60-80 : full utilization.

Description of intervention

The researcher given the IEC package on ICDS services to the participants in the study group. The IEC package comprised of a module and a set of flash cards. It was given for the mothers in three groups. For the first group it was given from 10 am to 11 am, for the second group from 12 noon to 1 pm and for the third group it was from 3 pm to 4 pm.

- Module: It is a booklet which consists of the objectives, phases of expansion, target group and the services, eligible beneficiaries and anganwadi worker.
- Flash cards: It is a set of cards which consists of the services for the beneficiaries.

Content validity

Validity of the tool was established with the consultation of the guide and five experts three M .Sc nursing faculties with five years experience, two medical officers in community medicine. The experts were requested to give their opinion and suggestion for further modification of items to improve the clarity and content of the items. The Final tool was prepared as per the suggestions and advice given by the experts.

Reliability of the tool

Reliability of the tool was obtained by test retest method. The calculated value for knowledge questionnaire was r=0.846 and for the rating scale on utilization was r=0.941 which signified that the tool is highly reliable.

Pilot study

The pilot study was conducted in Pandarakadu village for the mothers who have under five children. The researcher obtained initial permission from the principal to conduct the pilot study and then obtained permission from the Panchayat president of Villukuri panchayat.

The pilot study was conducted among six mothers who have under five children. Among them three for Study group and three for Control group were selected by random sampling method. The pre assessment was done with Knowledge Questionnaire and Utilization rating scale. Then IEC package was given for study group. Post test was conducted on the sixth day. Analysis of the data was done by using descriptive and inferential statistics. The tool and instrument were found feasible and practicable. No changes were made and researcher proceeded for the main study.

Procedure for Data Collection

Table -3.1: Procedure for Data Collection (N=60)

Data collection period	Data collection procedure		Method of data collection
	Study group (n=30)	Control group (n=30)	
16/06/2013	Survey (n=49)		Simple random sampling technique
17/06/2013	Survey (n=45)		
18/06/2013		Survey (n=42)	
19/06/2013		Survey (n=50)	
20/06/2013	Pre test (n=30)		
21/06/2013		Pre test (n=30)	
22/06/2013	Provided IEC package		
14/06/2013	Post test(n=30)	Post test(n=30)	

After obtaining the formal permission from the principal, St. Xavier‟s catholic collage of nursing and the approval from president of Villukuri punchayath and Nullivilai punchayath, the researcher proceeded with data

collection. Informed consent was taken from the mothers who have under five children who had participated in the study. The researcher selected Madathattuvilai village and Kandanvilai village randomly for study group and control group respectively. The researcher conducted survey and identified the mothers who have under five children. The researcher selected thirty mothers in a study group and thirty mothers in control group by using simple random technique. The researcher did pretest with a help of questionnaire on knowledge of ICDS services and rating scale on utilization status. After the pretest the IEC package on ICDS scheme was given for the study group. The mothers were grouped into 3 sub groups and given IEC package. At the 22nd day the post test was conducted for the study group and control group.

Plan for data analysis

Data collected was analyzed by using both descriptive and inferential statistics such as mean, standard deviation, paired,,t" test, unpaired ,,t" test, correlation and chi square test.

1. **Descriptive statistics:**

- Frequency and percentage distribution was used to analyze the demographic variables and to assess the level of knowledge and utilization.
- Mean and standard deviation was used to assess the effectiveness of IEC package on level of knowledge and utilization.

2. **Inferential statistics:**

- Unpaired,,t" test was used to compare the post test level of knowledge and utilization in Study group and Control group.
- Paired,,t" test was used to compare the pre test and post test level of knowledge and utilization in Study group.
- Chi-square test was used to find out the association of the post test level of knowledge and utilization in Study and Control group with their selected demographic variables.
- Correlation test was used to correlate between the utilization of ICDS services and knowledge on ICDS services among mothers in study and control group.

Protection of human rights

The proposed study was conducted after obtaining formal permission from the Principal and ethical committee of St. Xavier‟s Catholic College of Nursing and the panchayat presidents of Nullivilai panchayat and villukuri panchayat. The participants were informed that the responses provided by them will be kept confidential. The participants were assured that no harm will be caused to them during the course of the study.

CHAPTER IV

DATA ANALYSIS AND INTERPRETATION

Quantitative data was analyzed through statistical analysis includes simple procedures as well as complex and sophisticated methods. This chapter deal with the analysis and interpretation of the data collected from the mothers who have under five children. In order to find meaningful answers to the research questions the collected data must be processed and analyzed in some orderly coherent fashion, so that patterns and relationships can be discerned. In this study the data was analyzed based on the objectives and hypotheses of the study using descriptive and inferential statistics.

PRESENTATION OF DATA

This chapter is divided into three sections,

Section-A:

I. Distribution of the mothers according to the demographic variables in Study group and Control group.

Section-B:

II. Distribution of mothers in Study group and Control group according to the level knowledge and utilization before intervention.

III. Distribution of mothers in Study group and Control group according to the level of knowledge and utilization after intervention.

Section-C: Testing Hypotheses.

I. Comparison of pre test and post test level of knowledge and utilization among mothers who have under five children in Study group and Control group.

II. Comparison of post test level of knowledge and utilization among mothers who have under five children in Study group and Control group.

III. Association between the post test level of knowledge and utilization among mothers who have under five children in Study group and Control group with their demographic variables.

IV. Correlation between the utilization of ICDS services and knowledge on ICDS services among mothers in study and control group.

SECTION: A

DISTRIBUTION OF THE MOTHERS ACCORDING TO THE DEMOGRAPHIC VARIABLES IN STUDY AND CONTROL GROUP

Table 4.1: Frequency and percentage distribution of mothers who have under five children with respect to the demographic variables in study and Control group **Table: 4.1** **(N = 60)**

Sl. No.	Demographic variables	Study group (n=30)		Control Group (n=30)	
		f	%	f	%
1.	**Age of the mother**				
	• 21-25yrs	5	16.67	4	13.33
	• 26-30yrs	14	46.67	18	60
	• 31-35yrs	11	36.67	8	26.67
2.	**Age of the child**				
	• 2-3yrs	22	73.33	25	83.33
	• 4-5yrs	8	26.67	5	16.67
3.	**Gender of the child**				
	• Male	10	33.33	20	66.67
	• Female	20	66.67	10	33.33
4.	**Birth order of the child**				
	• One	10	33.33	11	36.67
	• Two	17	56.67	17	56.67
	• Three and above	3	10	2	6.67
5.	**Type of family**				
	• Nuclear	20	66.67	21	70
	• Joint	10	33.33	9	30
6.	**Family income per month**				
	• < Rs 5000	8	26.67	15	50
	• Rs 5000- Rs 10000	18	60	13	43.33
	• >Rs 10000	4	13.33	2	6.67

7.	**Educational status of mother**				
	• Professional, post gradate	3	10	2	6.67
	• Under graduate	3	10	2	6.67
	• HSC	5	16.67	7	23.33
	• S.S.L.C	9	30	11	36.67
	• Middle school	7	23.33	7	23.33
	• Primary School	3	10	1	3.33
	• No formal education	0	0	0	0
8.	**Educational status of Father**				
	• Professional, post gradate	0	0	1	3.33
	• Under graduate	7	23.33	5	16.67
	• HSC	3	10	7	23.33
	• S.S.L.C	7	23.33	10	33.33
	• Middle school	7	23.33	7	23.33
	• Primary School	6	20	0	0
	• No formal education	0	0	0	0
9.	**Occupation of the mother**				
	• Government Job	1	3.33	1	3.33
	• Private Job	2	6.67	3	10
	• Coolie	2	6.67	2	6.67
	• Business	1	3.33	2	6.67
	• Abroad	0	0	0	0
	• Home maker	24	80	22	73.33
10.	**Occupation of the father**				
	• Government Job	0	0	1	3.33
	• Private Job	5	16.67	5	16.67
	• Coolie	18	60	14	46.66
	• Business	3	10	9	30
	• Abroad	4	13.33	1	3.33
	• Unemployed	0	0	0	0

Table 4.1 shows the distribution of mothers according to the age of the mothers in Study group, out of 30 mothers 5(16.67%) belong to 21-25 years of age, 14(46.67%) of them belong to 26-30 years of age, 11(36.67%) belong to 31-36 years of age, and in control group 4(13.33%) belong to 21-25 years of age,18(60%) of them belong to 26-30, 8(26.67%) belong to 31-35 years of age.

Allocation of mothers based on the age of the child in the Study group out of 30 mothers 22(73.33%) belong to 2-3 years of age, 8(66.67%) of them belong to 4-5 years of age and in Control group 25(83.33%) of them belong to 2-3 years of age, 5(16.67%) of them belong to 4-5 years of age.

Dispersion of mothers in terms of gender of the child in the Study group, out of 30 mothers 10(33.33%) were male, 20(66.67%) of them were female, and in Control group 20(66.67%) were male and 10(33.33%) of them were female.

Distribution of mothers concerning to the birth order of the child in the Study group out of 30 mothers 10(33.33%) falls under first order, 17(56.67%) of them falls under second order, 3(10%) falls under third and more order and in Control group 11(36.67%) falls under first order, 17(56.67%) of them falls under second order, 2(6.67%) falls under third and more order.

Allocation of mothers according to the type of the family in the Study group out of 30 mothers 20(66.67%) belong to Nuclear family, 10(33.33%) of them belong to joint family, and in Control group 21(70%) belong to nuclear family, 9(30%) of them belong to joint family.

Dispersion of mothers according to the family income per month in the Study group out of 30 mothers 8(26.67%) were earning less than Rs5000 per month, 18(60%) were earning RS 5000-10000/month, 4(13.33%) were earning More than Rs10000/month, and in Control group 15(50%) were earning less than Rs5000/month, 13(43.33%) were earning Rs5000-10000/month, 2(6.67%) were earning more than Rs. 10000/month.

Distribution of mothers according to the educational status of the mother in the Study group, out of 30 mothers 3(10%) had professional degree /post graduate, 3(10%) of them had under graduate education, 5(16.67%) had higher secondary education, 9(30%) had high school education, 7(23.33%) had

middle school education 3(10%) had primary education and 0(0%) are illiterate and in Control group out of 30 mothers 2(6.67%) had professional degree /post graduate, 2(6.67%) of them had under graduate education, 7(23.33%) had higher secondary education, 11(36.67%) had high school education, 7(23.33%) had middle school education 1(3.33%) had primary education and 0(0%) are illiterate

Allocation of mothers according to the educational status of the father in the Study group, out of 30 mothers 0(0%) had professional degree /post graduate, 7(23.33%) of them had under graduate education, 3(10%) had higher secondary education, 7(23.33%) had high school education, 7(23.33%) had middle school education 6(20%) had primary education and 0(0%) were illiterate and in Control group out of 30 mothers 1(3.33%) had professional degree /post graduate, 5(16.67%) of them had under graduate education, 7(23.33%) had higher secondary education, 10(33.33%) had high school education, 7(23.33%) had middle school education 0(0%) had primary education and 0(0%) were illiterate

Dispersion of mothers according to the occupation of the mother in Study group, out of 30 mothers 1(3.33%) were government employee, 2(6.67%) of them were private employee 2(6.67%)were coli worker 1(3.33%) doing business, 0none of them are working in abroad and 24(80%) of them belonged to home maker and in Control group out of 30 mothers 1(3.33%) were government employee, 3(10%) of them were private employee 2(6.67%) were coli worker 2(6.67%) were doing business, none of them are working in abroad and 22(73.33%) of them were home makers.

Distribution of mothers based on the occupation of the father in Study group, out of 30 mothers 0(0%) were government employment, 5(16.67%) were private employment 18(60%) were coli worker 3(10%) doing business,4(13.33%) working abroad and 0(0%) of them were unemployed and in Control group out of 30 mothers 1(3.33%) were government employee, 5(16.67%) of them were private employee 14(46.67%) were coli worker 9(30%) were doing business, 1(3.33%)working in abroad and 0(0%) of them belonged to home maker.

SECTION-A

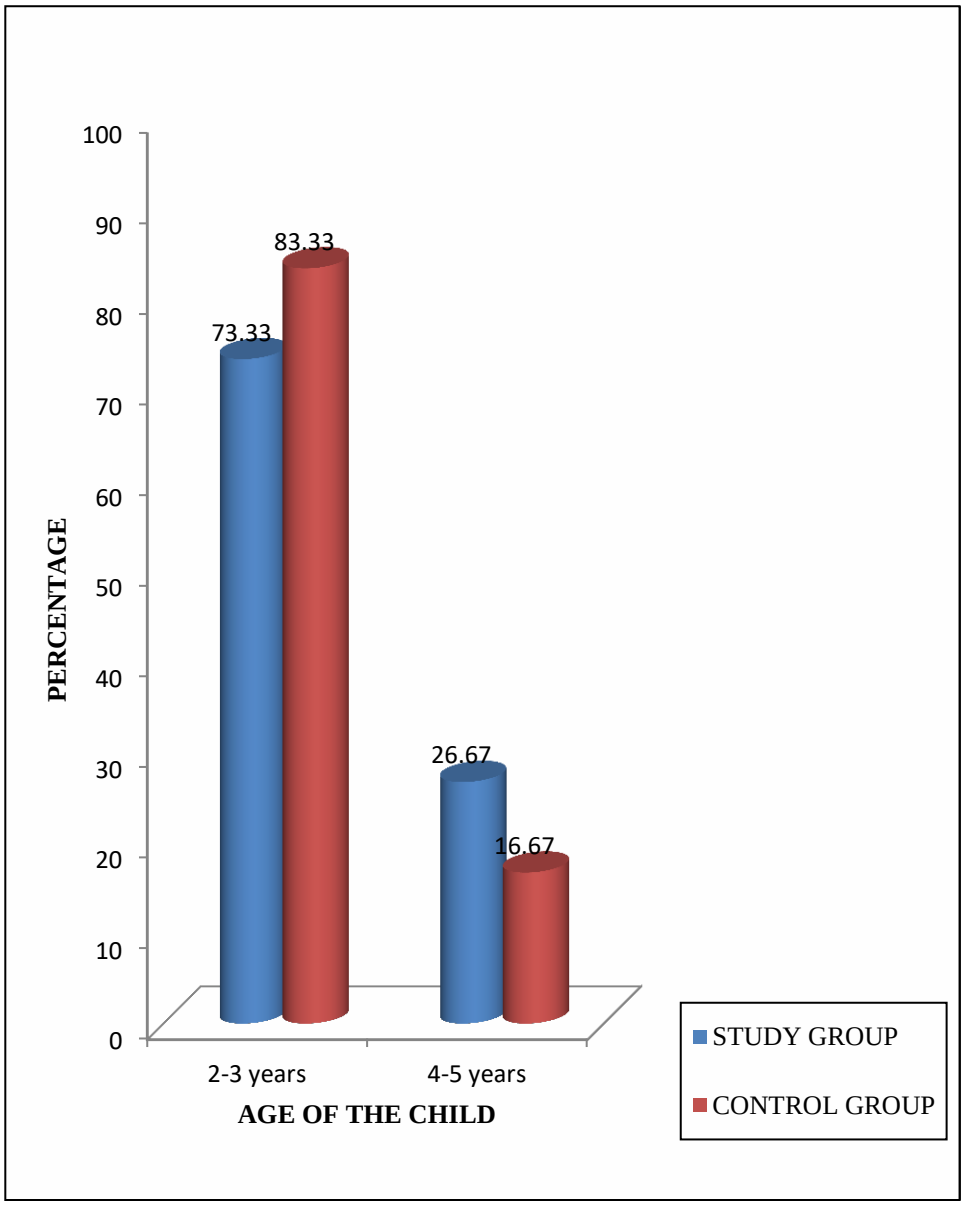

Fig-4.1: Distribution of the mothers according to the age of the child

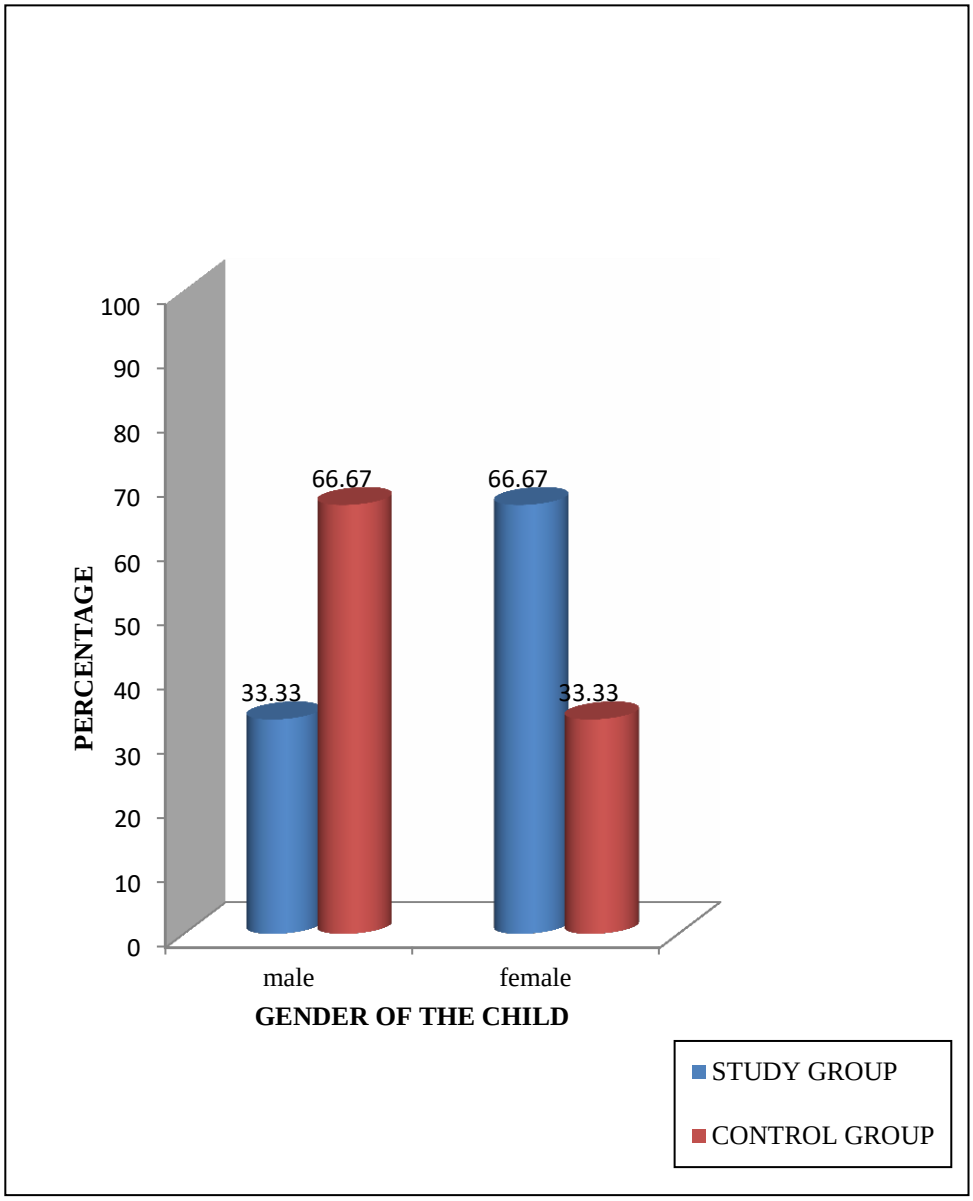

Fig-4.2: Distribution of the mothers according to the gender of the child

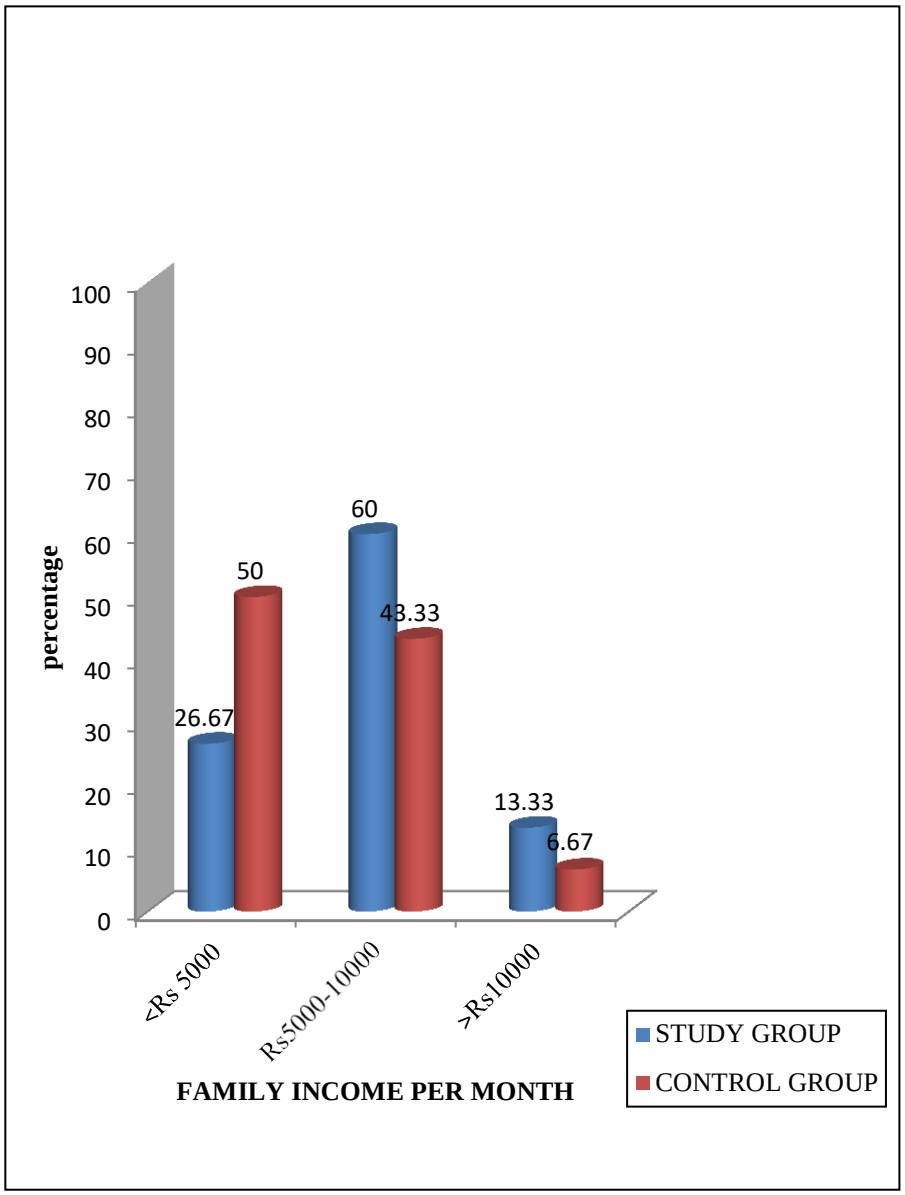

Fig-4.3: Distribution of the mothers according to the family income per month

Section-B

I. DISTRIBUTION OF MOTHERS ACCORDING TO THE LEVEL OF KNOWLEDGE BEFORE INTERVENTION

Table-4.2: Frequency and percentage distribution of mothers according to the level of knowledge in Study group and Control group before intervention. (N=60)

S. No	Level of knowledge	Pre test			
		Study group n=30		Control group n=30	
		F	%	f	%
1.	Inadequate level of knowledge	2	6.67	7	23.33
2.	Moderate level of knowledge	18	60	20	66.67
3.	Adequate level of knowledge	10	33.33	3	10

During pretest, in Study group 2(6.67%) had inadequate level of knowledge, 18(60%) had moderate level of knowledge, and 10(33.33%) had adequate level of knowledge. In Control group, 7(23.33%) had inadequate level of knowledge, 20 (66.67%) had moderate level of knowledge and 3(10%) had adequate level of knowledge.

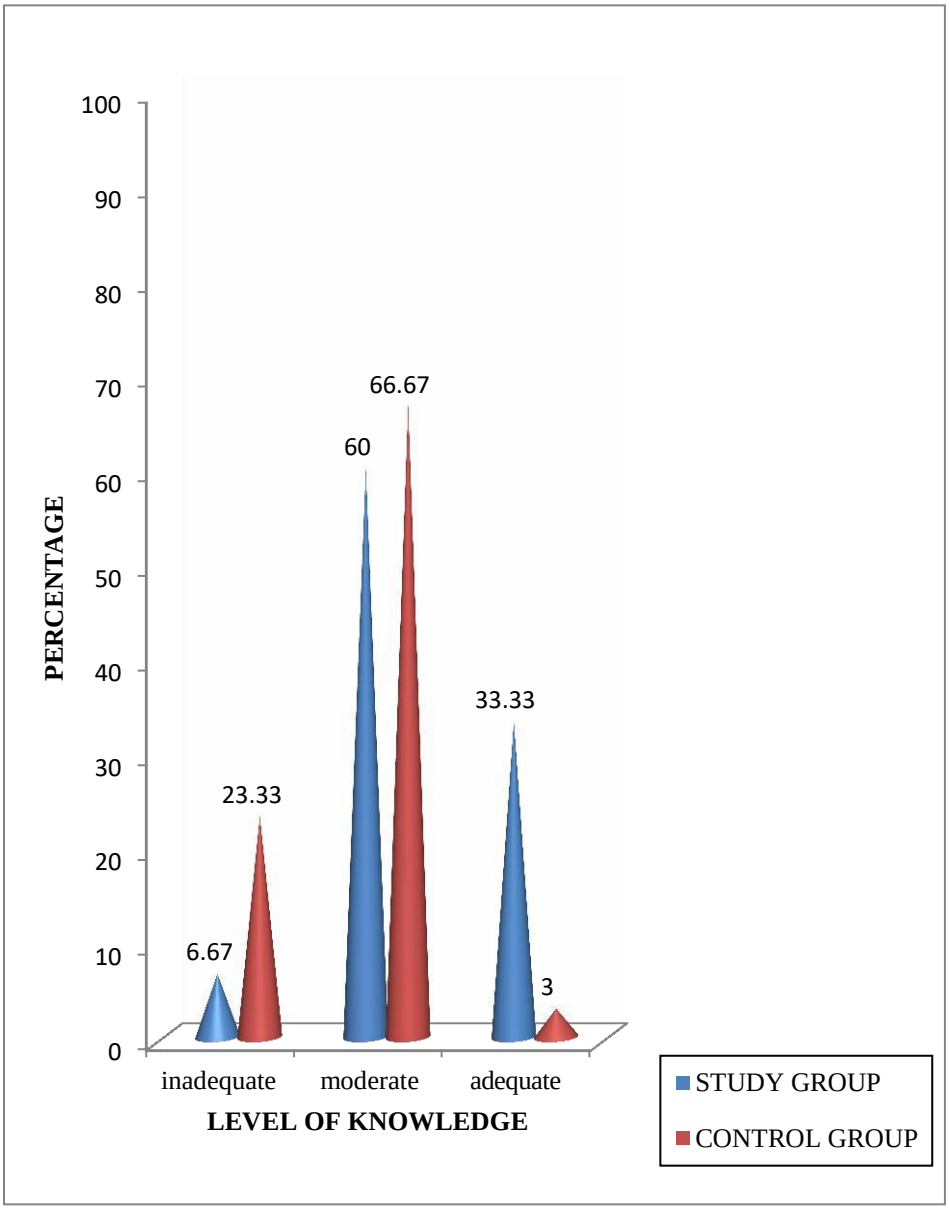

Fig-4.4: Frequency and percentage distribution of mothers according to the level of knowledge before intervention.

II Distribution of Mothers according to the Level of utilization before Intervention

Frequency and percentage distribution of mothers according to the level of utilization in Study group and Control group before intervention.

Table-4.3: (N=60)

S.No	Level of utilization	Pre test			
		Study group n=30		Control group n=30	
		F	%	f	%
1.	No utilization	5	16.67	3	10
2.	Partial utilization	22	73.33	27	90
3.	Full utilization	3	10	0	0

During pretest, in Study group 5(16.67%) had no utilization, 22(73.33%) had partial utilization, and 3(10%) had full utilization. In Control group, 3(10%) had no utilization, 27(90%) had partial utilization and 0(0%) had full utilization.

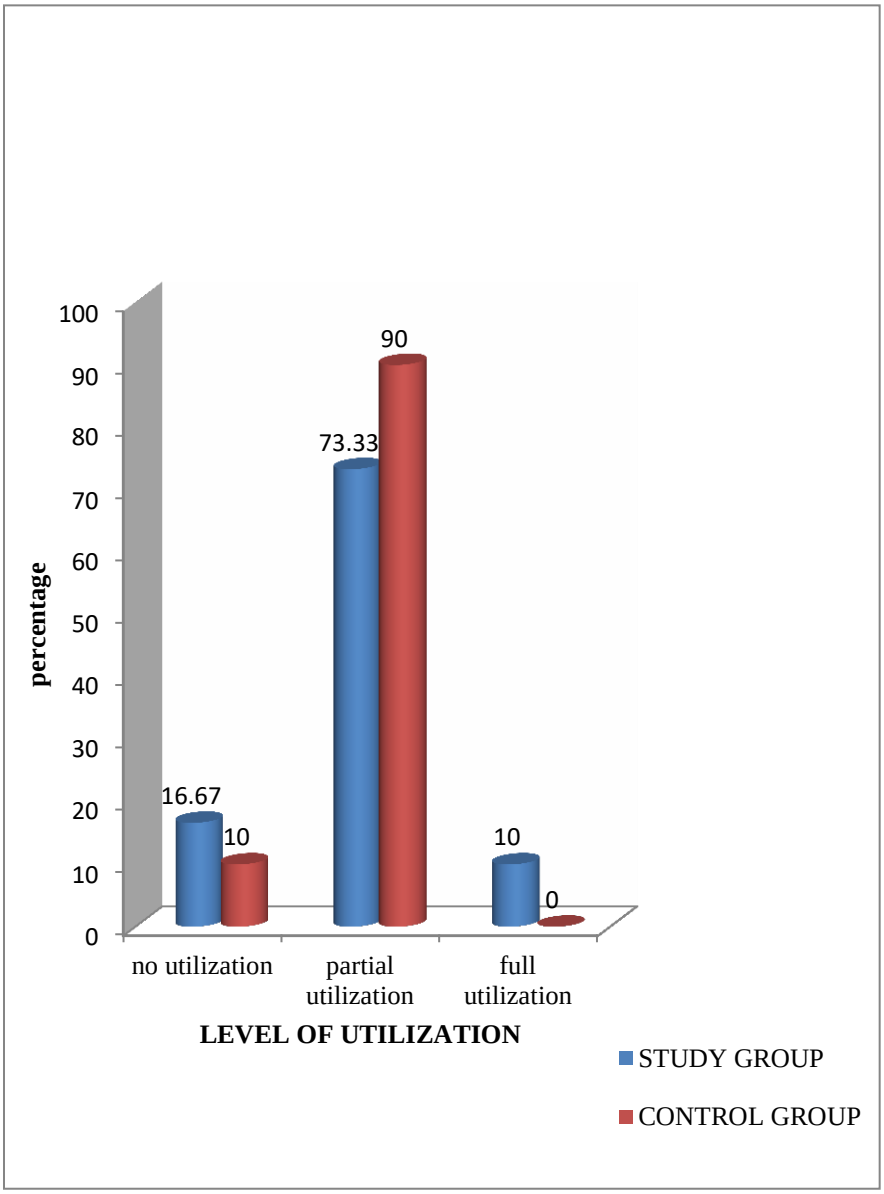

Fig-4.5: Frequency and percentage distribution of mothers according to the level of utilization before intervention.

III Distribution of Mothers according to the Level of knowledge after Intervention

Frequency and percentage distribution of mothers according to the level of knowledge in Study group and Control group after intervention

Table-4.4: (N=60)

Sl. No.	Level of knowledge	Post test			
		Study group n=30		Control group n=30	
		F	%	f	%
1.	Inadequate level of knowledge	0	0	6	20
2.	Moderate level of knowledge	11	36.67	21	70
3.	Adequate level of knowledge	19	63.33	3	10

During post test, in Study group, 0(0%) had inadequate level of knowledge, 11(36.67%) had moderate level of knowledge, 19(63.33%) had adequate level of knowledge. In Control group, 6(20%) had inadequate level of knowledge, 21(70%) had moderate level of knowledge, 3(10%) had adequate level of knowledge.

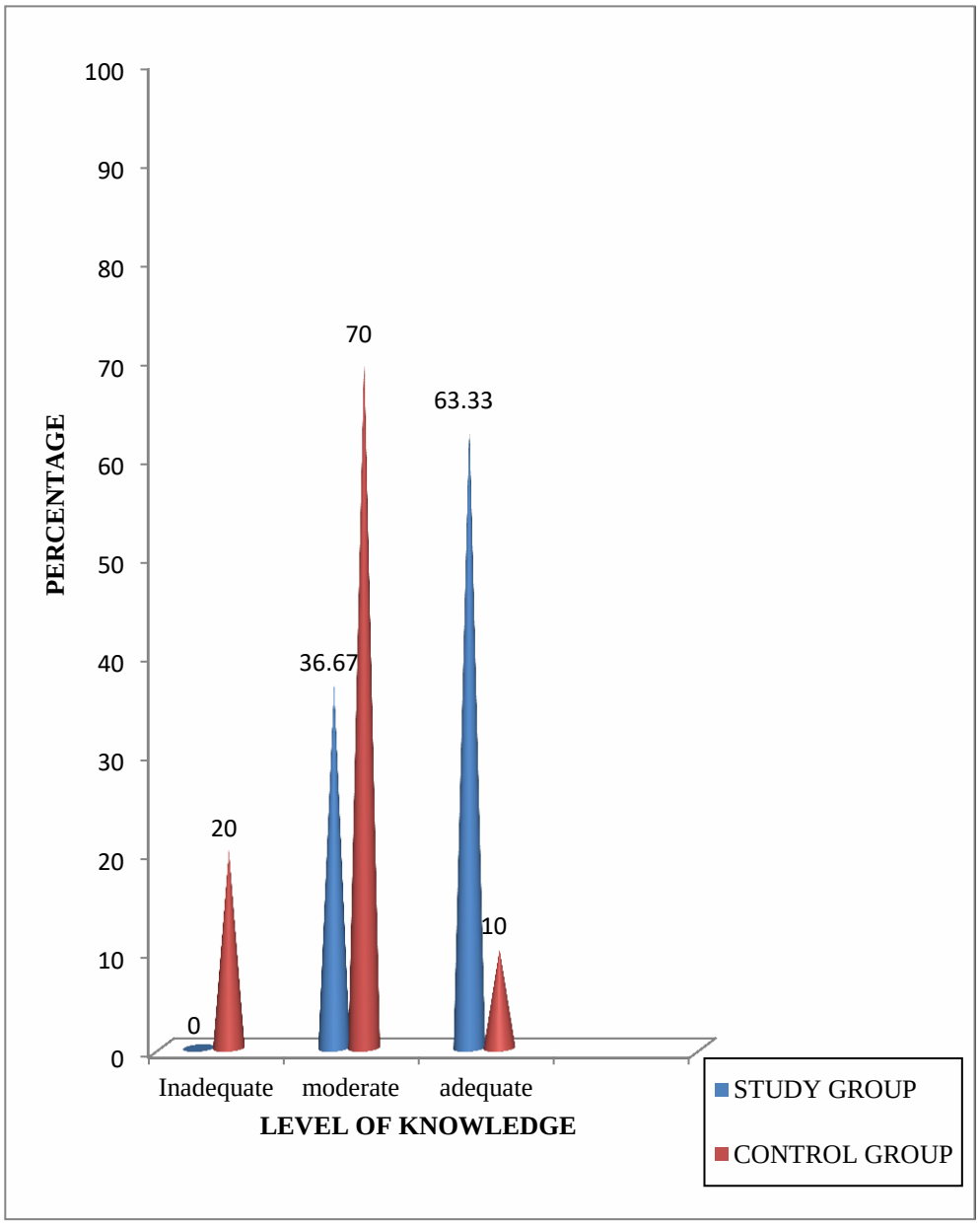

Fig-4.6: Distribution of mothers according to the Level of knowledge after Intervention

IV Distribution of Mothers according to the Level of utilization after Intervention

Frequency and percentage distribution of mothers according to the level of utilization in Study group and Control group after intervention

Table-4.5: (N=60)

S. No	Level of utilization	Post test			
		Study group n=30		Control group n=30	
		F	%	f	%
1.	No utilization	0	0	5	16.67
2.	Partial utilization	26	86.67	25	83.33
3.	Full utilization	4	13.33	0	0

During post test, in Study group 0(0%) had no utilization, 26(86.67%) had partial utilization, and 4(13.33%) had full utilization. In Control group, 5(16.67%) had no utilization, 25(83.33%) had partial utilization and 0(0%) had full utilization.

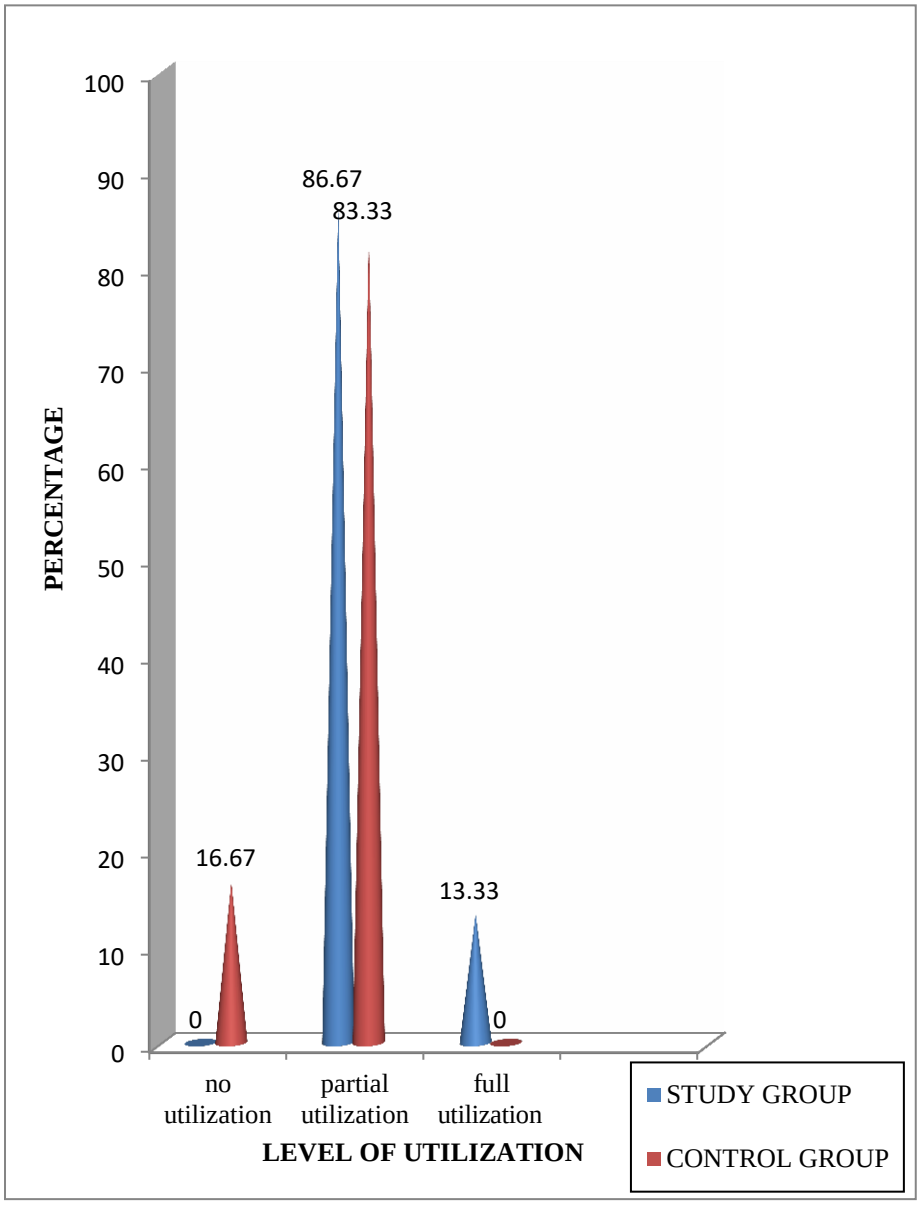

Fig- 4.7 Distribution of mothers according to the Level of utilization after Intervention

SECTION-C

TESTING HYPOTHESES

I. COMPARISON OF PRE TEST AND POST TEST LEVEL OF KNOWLEDGE AND UTILIZATION AMONG MOTHERS WHO HAVE UNDER FIVE CHILDREN IN STUDY AND CONTROL GROUP

Mean, SD and paired 't' value on pre and post test level of knowledge among mothers who have under five children in Study group and Control group Table-4.6: (N=60)

S. No	Group	Mean	SD	Mean difference	Df	Paired 't'
1.	**Study group knowledge**					
	• Pre test	12.5	2.986	2.7		10.45*
	• Post test	15.2	2.434		29	
	Utilization					
	• Pre test	45.40	13.89	4.73		5.7*
	• Post test	50.13	12.04			
2.	**Control group knowledge**					
	• Pre test	9.23	2.85	0.24		1.39
	• Post test	9.47	2.65		29	
	Utilization			0.10		
	• Pre test	43.37	8.11			1.62
	• Post test	43.47	8.14			

Table value t=1.69, * Significant at p < 0.05 level.

Table - 4.6 represents, the mean score on level of knowledge in mothers in Study group was 12.5 in pre test and 15.2 in post test. The paired„t" value was 10.45***** which is significant at p < 0.05. The mean score on level of utilization in mothers in Study group was 45.40 in pre test and 50.13 in post test. The paired„t" value was 5.7* which is significant at p < 0.05.It shows that IEC package was effective in increasing the level of knowledge and utilization. Hence the research hypothesis (H_1) is accepted.

In Control group the mean score on level of knowledge in mothers was 9.23 in pre test and 9.47 in post test. The paired„t‟ value was 1.39 which is not significant at $p < 0.05$. The mean score on level of utilization in mothers in control group was 43.37 in pre test and 43.47 in post test. The estimated paired„t‟ value was 1.62 which is non significant at $p < 0.05$.

II. Comparison of post test level of knowledge among mothers who have under five children in Study group and Control group.

Mean, SD and unpaired „t" value on level of knowledge among mothers who have under five children in Study group and Control group after intervention.

Table-4.7: (N=60)

S. No	Groups	Mean	SD	df	unpaired 't' value
1.	Study	15.27	2.43	58	8.67*
2.	Control	9.47	2.65		

Table value t=1.96, * Significant at p < 0.05 level.

Table - 4.7 represents, the mean score on level of knowledge among mothers who have under five children in Study group was 15.27 in post test and 9.47 in Control group post test. The estimated„t" value was 8.67* which is significant at p < 0.05. It shows that IEC package is effective in increasing the knowledge. Hence the research hypothesis (H_2) is accepted.

III. Comparison of post test level of utilization among mothers who have under five children in Study group and Control group.

Mean, SD and unpaired „t‟ value on level of utilization among mothers who have under five children in Study group and Control group after intervention.

Table-4.8 **(N=60)**

S. No	Groups	Mean	SD	df	unpaired 't' value
1.	Study	50.13	12.05	58	2.47*
2.	Control	43.47	8.139		

Table value t=1.96, * Significant at p < 0.05 level.

Table - 4.8 represents, the mean score on level of utilization among mothers who have under five children in Study group was 50.13 in post test and 43.47 in Control group post test. The estimated„t‟ value was 2.47* which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the utilization. Hence the research hypothesis (H_2) is accepted.

IV Correlation between the utilization of ICDS services and knowledge on ICDS services among mothers in study and control group.

Table -4.9: (N=60)

S. No	groups	Between knowledge and utilization	Correlation coefficient 'r' value
1.	Study group	Pre test	0.508*
		Post test	0.416*
2.	Control group	Pre test	-0.023
		Post test	0.026

Table -4.9 shows that there is positive correlation in between the knowledge and utilization in the study group, which is 0.508 in pre test, and 0.416 in post test and there negative correlation in between the knowledge and utilization in the control group, in pre test -0.023 and positive correlation in post test 0.026. Hence H_3 is accepted.

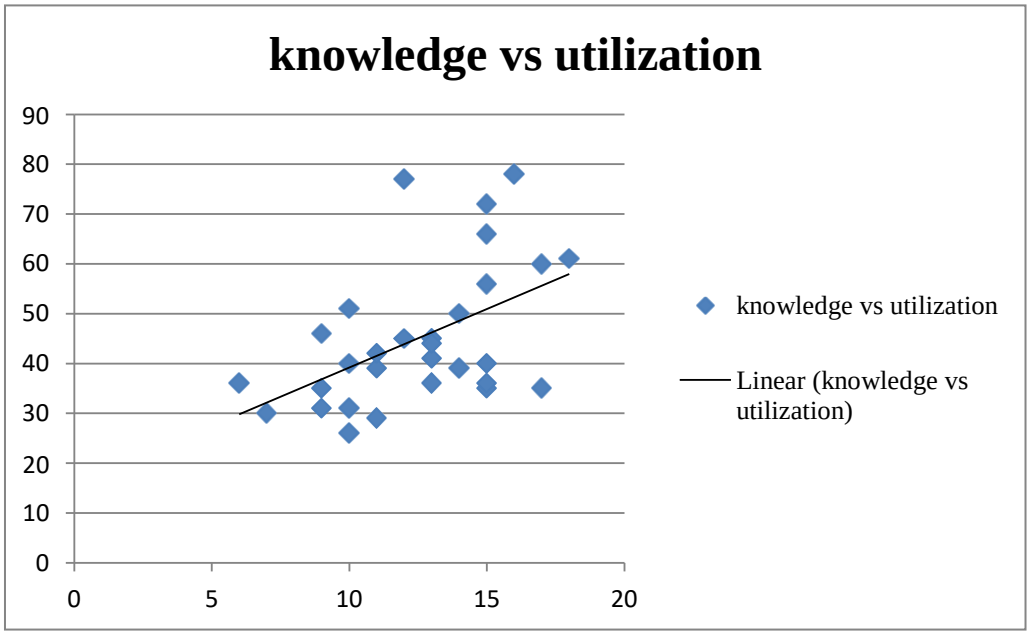

Fig 4.8: Correlation in between the knowledge and utilization in the study group in pre test.

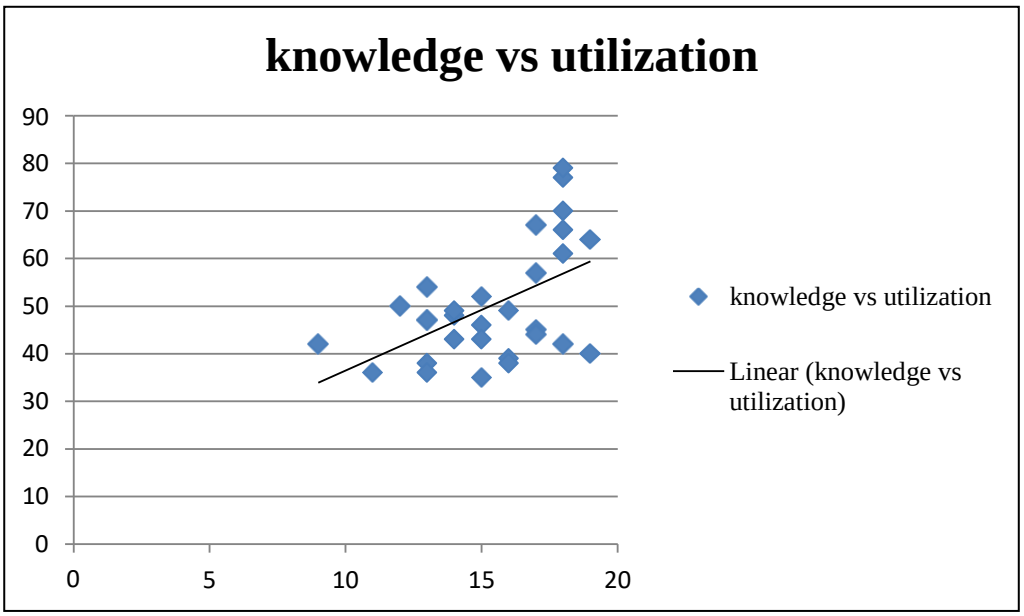

Fig 4.9: Correlation in between the knowledge and utilization in the study group in post test.

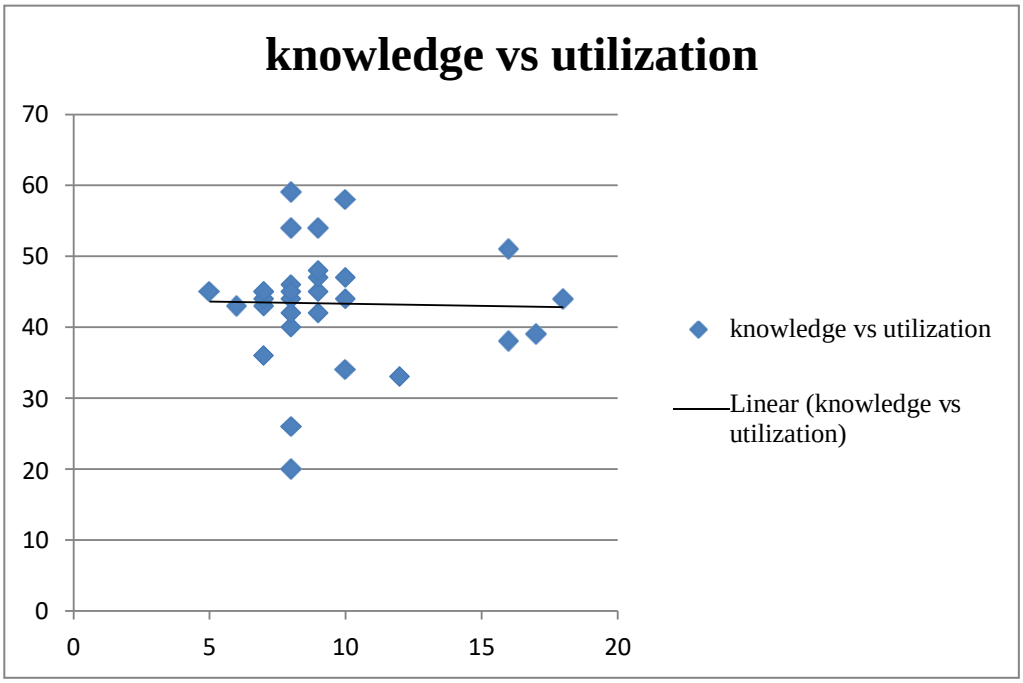

Fig4.10: Correlation in between the knowledge and utilization in the control group in pre test.

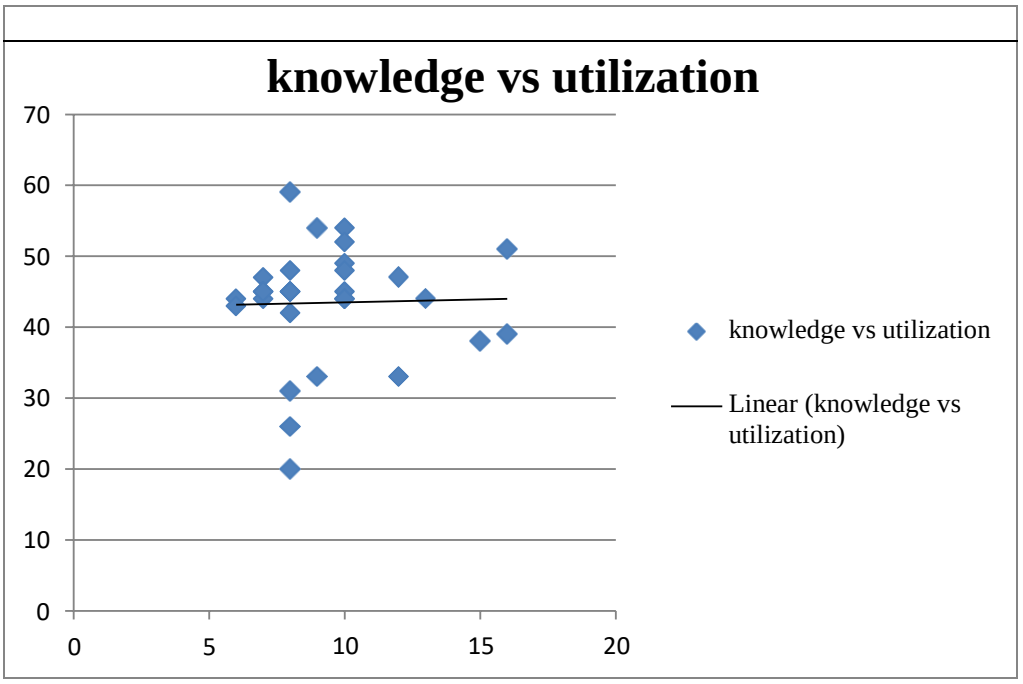

Fig 4.11: Correlation in between the knowledge and utilization in the control group in post test.

V Association between the Level of knowledge and their Selected Demographic Variables in Study group and Control Group

Chi-square test on the level of knowledge among mothers who have under five children and their selected demographic variables in Study group and Control group.

Table-4.10 **(N=60)**

S. No	Demographic Variables	Study group			Control Group		
		df	χ^2	Table Value	df	χ^2	Table Value
1.	Age of the mother	4	0.79	9.49	4	6.27	9.49
2	Age of the child	2	0.64	5.99	2	0.69	5.99
3.	Gender of the child	2	0.29	5.99	2	0	5.99
4.	Birth order of the child	4	6.39	9.49	4	3.37	9.49
5.	Type of the family	2	4.59	5.99	2	2.45	5.99
6.	Family income per month	4	2.79	9.49	4	7.99	9.49
7.	Educational status of the mother	12	13.7	21.03	12	13.19	21.03
8.	Educational status of father	12	2.93	21.03	12	13.44	21.03
9.	Occupation of the mother	10	2.72	18.31	10	14.9	18.31
10.	Occupation of the father	10	3.11	18.31	10	6.89	18.31

Table 4.9 shows that in Study group, on considering the age of the mother, chi-square value was 0.79 and the table value at degrees of freedom four was 9.49. As per the age of the child, the chi-square was 0.64 and the table value at degrees of freedom two was 5.99. On seeing the gender of the child, the chi-square value was 0.29, at degrees of freedom two, the table value was 5.99. birth order of the child shows that chi-square value was 6.39, and the table value was 9.49 at degree of freedom four. Considering the previous type

of the family, chi-square value was 4.59 with the table value of 5.99 at degrees of freedom two. Considering the family income, in Study group the chi-square value is 2.79 with table value of 9.49 at degrees of freedom four. Educational status of the mother shows that chi-square value is 13.7 and table value is 21.03 at degrees of freedom twelve. Educational status of the father shows chi-square value of 2.93 and table value of 21.03 at degrees of freedom twelve. As per the occupation of the mother, chi-square shows value of 2.72 and table value of 18.31 at degrees of freedom ten. Occupation of the father shows chi-square value of 3.11 whereas table value is 18.31 at degrees of freedom ten.

Table 4.9 shows that in control group, on considering the age of the mother, chi-square value was 6.27 and the table value at degrees of freedom four was 9.49. As per the age of the child, the chi-square was 0.69 and the table value at degrees of freedom two was 5.99. On seeing the gender of the child, the chi-square value was 0, at degrees of freedom two, the table value was 5.99. Birth order of the child shows that chi-square value was 3.37, and the table value was 9.49 at degree of freedom four. Considering the previous type of the family, chi-square value was 2.45 with the table value of 5.99 at degrees of freedom two. Considering the family income, in Study group the chi-square value is 7.99 with table value of 9.49 at degrees of freedom four. Educational status of the mother shows that chi-square value is 13.19 and table value is 21.03 at degrees of freedom twelve. Educational status of the father shows chi-square value of 13.44 and table value of 21.03 at degrees of freedom twelve. As per the occupation of the mother, chi-square shows value of 14.9 and table value of 18.31 at degrees of freedom ten. Occupation of the father shows chi-square value of 6.89 whereas table value is 18.31 at degrees of freedom ten.

Table4.9 shows that there was no significant association between the post test level of knowledge among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, family income per month, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level. So the hypothesis H_4 is not accepted.

VI. Association between the Level of utilization and their Selected Demographic Variables in Study group and Control Group

Chi-square test on the level of utilization among mothers who have under five children and their selected demographic variables in Study group and Control group

Table-4.11 **(N=60)**

Sl. No	Demographic Variables	Study group			Control Group		
		df	χ^2	Table Value	df	χ^2	Table Value
1.	Age of the mother	4	1.004	9.49	4	4.8	9.49
2	Age of the child	2	5.51	5.99	2	2.35	5.99
3.	Gender of the child	2	2.31	5.99	2	0.13	5.99
4.	Birth order of the child	4	0.83	9.49	4	0.43	9.49
5.	Type of the family	2	0.58	5.99	2	0.29	5.99
6.	Family income per month	4	9.46	9.49	4	10.96	9.49
7.	Educational status of the mother	12	2.19	21.03	12	3.39	21.03
8.	Educational status of the father	12	2.8	21.03	12	2.43	21.03
9.	Occupation of the mother	10	2.96	18.31	10	6.54	18.31
10.	Occupation of the father	10	1.88	18.31	10	0.69	18.31

Table 4.10 shows that in Study group, on considering the age of the mother, chi-square value was 1.004 and the table value at degrees of freedom four was 9.49. As per the age of the child, the chi-square was 5.51 and the table value at degrees of freedom two was 5.99. On seeing the gender of the child, the chi-square value was 2.31, at degrees of freedom two, the table value was 5.99. birth order of the child shows that chi-square value was 0.83, and the table value was 9.49 at degree of freedom four. Considering the previous type of the family, chi-square value was 0.58 with the table value of 5.99 at degrees of

freedom two. Considering the family income, the chi-square value is 9.46 with table value of 9.49 at degrees of freedom four. Educational status of the mother shows that chi-square value is 2.19 and table value is 21.03 at degrees of freedom twelve. Educational status of the father shows chi-square value of 2.80 and table value of 21.03 at degrees of freedom twelve. As per the occupation of the mother, chi-square shows value of 2.96 and table value of 18.31 at degrees of freedom ten. Occupation of the father shows chi-square value of 1.88 whereas table value is 18.31 at degrees of freedom ten.

In Study group, on considering the age of the mother, chi-square value was 4.8 and the table value at degrees of freedom four was 9.49. As per the age of the child, the chi-square was 2.35 and the table value at degrees of freedom two was 5.99. On seeing the gender of the child, the chi-square value was 0.13, at degrees of freedom two, the table value was 5.99. birth order of the child shows that chi-square value was 0.43, and the table value was 9.49 at degree of freedom four. Considering the type of the family, chi-square value was 0.29 with the table value of 5.99 at degrees of freedom two. Considering the family income, the chi-square value is 10.96 with table value of 9.49 at degrees of freedom four. Educational status of the mother shows that chi-square value is 3.39 and table value is 21.03 at degrees of freedom twelve. Educational status of the father shows chi-square value of 2.43 and table value of 21.03 at degrees of freedom twelve. As per the occupation of the mother, chi-square shows value of 6.55 and table value of 18.31 at degrees of freedom ten. Occupation of the father shows chi-square value of 0.69 whereas table value is 18.31 at degrees of freedom ten.

Table4.10 shows that there was no significant association between the post test level of utilization among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, family income per month, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level. So the hypothesis H_4 is not accepted.

This chapter dealt with data analysis and interpretation in the form of statistical value based on the objective, paired „t‟ test was used to evaluate the effectiveness of IEC package on knowledge and utilization level in study group and independent „t‟ test was used to compare the pre test and post test level of knowledge and utilization in study and control group. Chi square test was used to find out the association between the level of knowledge and utilization among mothers who have under five children with their selected demographic variables in study and control group.

CHAPTER-V

DISCUSSION

This true experimental study was done to assess the utilization and evaluate the effectiveness of IEC package on ICDS services among mothers who have under five children in Kandanvilai village and Madathattuvilai village in Kanyakumari district, Tamil Nadu.

Distribution of mothers according to their demographic variables.

The demographic profile in study group according to the age of the mothers are 5(16.67%) belong to 21-25 years of age, 14(46.67%) of them belong to 26-30 years of age, 11(36.67%) belong to 31-36 years of age. According to the age of the child 22(73.33%) belong to 2-3 years of age, 8(66.67%) of them belong to 4-5 years of age. According to the gender of the child 10(33.33%) were male and 20(66.67%) of them were female. According to the birth order of the child 10(33.33%) belong to first, 17(56.67%) of them belong to second, 3(10%) belong to three and more. According to the type of the family 20(66.67%) belonged to Nuclear family, 10(33.33%) of them belonged to joint family. In case of the family income per month 8(26.67%) had less than Rs 5000 per month, 18(60%) of them had Rs 5000-10000/month, 4(13.33%) had More than Rs10000/month. According to the educational status of the mother 3(10%) had professional degree /post graduate, 3(10%) of them had under graduate education, 5(16.67%) belong had secondary education, 9(30%) had high school education, 7(23.33%) had middle school education 3(10%) had primary education and 0(0%) were illiterate. According to the educational status of the father 0(0%) had professional degree /post graduate, 7(23.33%) of them had under graduate education, 3(10%) had higher secondary education, 7(23.33%) had high school education, 7(23.33%) had middle school education 6(20%) had primary education and 0(0%) were illiterate. According to the occupation of the mother 1(3.33%) had government employment, 2(6.67%) were private employee 2(6.67%) were coolie worker 1(3.33%) were doing business, 0(0%) were in abroad and 24(80%) of them were home maker. According to the occupation of the father none of them had

government employment, 5(16.67%) of them were private employee 18(60%) were coolie worker 3(10%) were doing business, 4(13.33%) were in abroad and 0(0%) of them were unemployed.

In control group 4(13.33%) mothers belong to 21-25 years of age,18(60%) mothers belong to 26-30, 8(26.67%) mothers belongs to 31-35 years of age. According to the age of the child 25(83.33%) of them belonged to 2-3 years of age, 5(16.67%) of them belonged to 4-5 years of age. According to the gender of the child 20(66.67%) belonged to male gender and 10(33.33%) of them belonged to female gender. According to the birth order of the child 11(36.67%) belonged to first, 17(56.67%) of them belonged to second, 2(6.67%) belonged to thirds and more. According to the type of the family 21(70%) belonged to nuclear family, 9(30%) of them belonged to joint family. Based on the family income per month 15(50%) had less than Rs5000/month, 13(43.33%) of them had Rs5000-10000/month, 2(6.67%) had more than Rs 10000/month. In concern to the educational status of the mother 2(6.67%) had professional degree /post graduate, 2(6.67%) of them had under graduate education, 7(23.33%) had higher secondary education, 11(36.67%) had high school education, 7(23.33%) had middle school education 1(3.33%) had primary education and 0(0%) were illiterate. In concern to the educational status of the father 1(3.33%) had professional degree /post graduate, 5(16.67%) of them had under graduate education, 7(23.33%) had higher secondary education, 10(33.33%) had high school education, 7(23.33%) had middle school education 0(0%) had primary education and 0(0%) were illiterate. Based on the occupation of the mother 1(3.33%) were government employee, 3(10%) of them were private employee 2(6.67%) were coli worker 2(6.67%) were doing business, 0(0%) were in abroad and 22(73.33%) of them were home maker. Based on the occupation of the father 1(3.33%) had government employment, 5(16.67%) of them had private employment 14(46.67%) were coli worker 9(30%) were doing business, 1(3.33%) were in abroad and 0(0%) of them were unemployed.

The first objective is to compare the pre and post test level of knowledge and utilization of ICDS among mothers who have under five children in study and control group.

Based on the conceptual framework which is adopted from Imogene King goal attainment theory, in the perception and judgment step the researcher found out the knowledge and utilization of mothers.

Knowledge:

In study group during pre test, 2(6.67%) had inadequate level of knowledge, 18(60%) had moderate level of knowledge, and 10(33.33%) had adequate level of knowledge, during post test, 0(0%) had inadequate level of knowledge, 11(36.67%) had moderate level of knowledge, 19(63.33%) had adequate level of knowledge.

In control group in the post test 7(23.33%) had inadequate level of knowledge, 20 (66.67%) had moderate level of knowledge and 3(10%) had adequate level of knowledge and in the post test 6(20%) had inadequate level of knowledge, 21(70%) had moderate level of knowledge, 3(10%) had adequate level of knowledge.

The mean score on level of knowledge in mothers in Study group was 12.5 in pre test and 15.2 in post test. The paired „t" value was 10.45***** which is significant at $p < 0.05$. It shows that IEC package was effective in increasing the level of knowledge and utilization. Hence the research hypothesis (H_1) is accepted.

In Control group the mean score on level of knowledge in mothers was 9.23 in pre test and 9.47 in post test. The paired „t" value was 4.4***** which is not significant at $p < 0.05$.

Utilization

In Study group during pretest, 5(16.67%) had no utilization, 22(73.33%) had partial utilization, and 3(10%) had full utilization. During post test, 0(0%) had no utilization, 26(86.67%) had partial utilization, and 4(13.33%) had full utilization.

In Control group, during pre test 3(10%) had no utilization, 27(90%) had partial utilization and 0(0%) had full utilization. During post test 5(16.67%)

had no utilization, 25(83.33%) had partial utilization and 0(0%) had full utilization.

The mean score on level of utilization in mothers in Study group was 45.40 in pre test and 50.13 in post test. The paired „t" value was 5.7* which is significant at $p < 0.05$.It shows that IEC package was effective in increasing the level of knowledge and utilization. Hence the research hypothesis (H_1) is accepted.

The mean score on level of utilization in mothers in control group was 43.37 in pre test and 43.47 in post test. The estimated paired „ t" value was 2.39*which is non significant at $p < 0.05$.

This result was supported by the following study. **Jawahar, et al (2011)** conducted a study to assess the knowledge and utilization of Integrated Child Development Scheme (ICDS) services among women. A sample size of 225 women from Udupi was selected for the study. The results revealed that 49.3% had average knowledge and 46.7% with poor knowledge regarding ICDS. Among pregnant women there was 74.1% utilization of supplementary nutrition and 7.4% utilization of immunization. Among lactating mothers there was 76.2% utilization of supplementary nutrition, 4.8% utilization of health education. Mothers having children revealed that, there was 71.1% utilization of supplementary nutrition, 58.3% utilization of health checkup, 69.3% utilization of non-formal preschool education, 26.7% full and 50.5% partial utilization of immunization services. The main reason for not utilizing ICDS services were due to household work (43%), distance from anganwadi (40%) and due to lack of awareness (13%). They concluded that accurate information and encouragement from health personnel will further help to improve the knowledge and utilization of ICDS services.

The second objective is to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS scheme among mothers in study group

The mean score on level of knowledge among mothers who have under five children in Study group was 15.27 in post test and 9.47 in Control group in post test. The estimated„t‟ value was 8.67* which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the knowledge. Hence the research hypothesis (H_2) is accepted.

The mean score on level of utilization among mothers who have under five children in Study group was 50.13 in post test and 43.47 in Control group post test. The estimated„t‟ value was 2.47* which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the utilization.

The result was supported by the following study. **Sunny, T (2012)** conducted a study to assess the effectiveness of structured teaching programme on knowledge regarding ICDS programme among the mothers who have under five children at uttarahalli village in Bangalore. 60 mothers were selected. The findings showed that the mean post test knowledge score of the subjects in the study group was 65.39%. It is higher than the mean pretest score of 45.98%. It was found to be significant with the calculated value of 18.47, $p<0.05$ which was higher than the critical value showing that the improvement in knowledge score was significant. The demographic variables such as age, educational status and source of information shows a significant association with post test level of knowledge. Findings of the study indicate Structured Teaching Programme was significantly effective in improving the knowledge score of mother of under five children regarding ICDS programme.

Based on the conceptual framework which is adopted from Imogene King goal attainment theory, in the interaction step the researcher found out the knowledge and utilization of mothers after the intervention.

The third objective is to correlate the utilization of ICDS services and knowledge on ICDS services among mothers in study and control group.

There is positive correlation in between the knowledge and utilization in the study group, which is 0.508* in pre test, and 0.416* in post test and there negative correlation in between the knowledge and utilization in the control group, in pre test -0.023 and positive correlation in post test 0.026. Hence the research hypothesis (H_3) is accepted.

The fourth objective is to determine the association between the post test level of knowledge and utilization among mothers who have under five children with their selected demographic variables in study and control group.

There was no significant association between the post test level of knowledge among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, family income per month, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level.

There was no significant association between the post test level of utilization among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, family income per month, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level. Hence the hypothesis H_4 is not accepted.

CHAPTER – VI

SUMMARY, CONCLUSION, LIMITATIONS, NURSING IMPLICATION AND RECOMMENDATIONS

This chapter dealt with the summary of the study, conclusion drawn, nursing implications, limitations and recommendations of the study.

SUMMARY

Quantitative evaluative approach with true experimental pre test and post test control group research design was used to determine the effectiveness of IEC package on knowledge and utilization among mothers who have under five children. The conceptual framework adopted for the study was based on king‟s goal attainment theory. The tool used in this study consisted of four parts. Part one was Survey form, part two was the demographic variables and part three is Questionnaire on knowledge of ICDS Services to assess the level of knowledge and the part four is Check list on utilization status.

Random sampling technique was used to select the mothers and data was collected from the study participants in study and control group. The data were collected and analyzed using descriptive and inferential statistics. The level of significant was assessed by $p<0.05$ to test the hypothesis.

FINDINGS

The major findings of the study was summarized as follows,

- The demographic profile in study group according to the age of the mothers are 5(16.67%) belong to 21-25 years of age, 14(46.67%) of them belong to 26-30 years of age, 11(36.67%) belong to 31-36 years of age. According to the age of the child 22(73.33%) belong to 2-3 years of age, 8(66.67%) of them belong to 4-5 years of age. According to the gender of the child 10(33.33%) belong to male 20(66.67%) of them belong to female. According to the birth order of the child 10(33.33%) belong to one, 17(56.67%) of them belong to two, 3(10%) belong to three and more. According to the type of the family 20(66.67%) belong to Nuclear family,

10(33.33%) of them belong to joint family. According to the family income per month 8(26.67%) belong to less than Rs 5000 per month, 18(60%) of them belong to Rs 5000-10000/month, 4(13.33%) belong to More than Rs10000/month. According to the educational status of the mother 3(10%) belong to professional degree /post graduate, 3(10%) of them belong to under graduate education, 5(16.67%) belong to higher secondary education, 9(30%) belong to high school education, 7(23.33%) belong to middle school education 3(10%) belong to primary education and 0(0%) belong to illiterate. According to the educational status of the father 0(0%) belong to professional degree /post graduate, 7(23.33%) of them belong to under graduate education, 3(10%) belong to higher secondary education, 7(23.33%) belong to high school education, 7(23.33%) belong to middle school education 6(20%) belong to primary education and 0(0%) belong to illiterate. According to the occupation of the mother 1(3.33%) belong to government employment, 2(6.67%) of them belonged to private employment 2(6.67%) belonged to coli worker 1(3.33%) belonged to business, 0(0%) belonged to abroad and 24(80%) of them belonged to home maker. According to the occupation of the father 0(0%) belonged to government employment, 5(16.67%) of them belonged to private employment 18(60%) belonged to coli worker 3(10%) belonged to business,4(13.33%) belonged to abroad and 0(0%) of them belonged to unemployed.

- In control group 4(13.33%) mothers belong to 21-25 years of age,18(60%) mothers belong to 26-30, 8(26.67%) mothers belongs to 31-35 years of age. According to the age of the child 25(83.33%) of them belonged to 2-3 years of age, 5(16.67%) of them belonged to 4-5 years of age. According to the gender of the child 20(66.67%) belonged to male gender and 10(33.33%) of them belonged to female gender. According to the birth order of the child 11(36.67%) belonged to one, 17(56.67%) of them belonged to two, 2(6.67%) belonged to three and more. According to the type of the family 21(70%) belonged to nuclear family, 9(30%) of them belonged to joint family. Based on the family income per month 15(50%) belonged to less than Rs5000/month, 13(43.33%) of them belonged to Rs5000-10000/month, 2(6.67%) belonged to more than Rs 10000/month. In concern to the educational status of the mother 2(6.67%) belonged to professional degree /post graduate, 2(6.67%) of them

belonged to under graduate education, 7(23.33%) belonged to higher secondary education, 11(36.67%) belongs to high school education, 7(23.33%) belonged to middle school education 1(3.33%) belonged to primary education and 0(0%) belonged to illiterate. In concern to the educational status of the father 1(3.33%) belonged to professional degree /post graduate, 5(16.67%) of them belonged to under graduate education, 7(23.33%) belonged to higher secondary education, 10(33.33%) belongs to high school education, 7(23.33%) belonged to middle school education 0(0%) belonged to primary education and 0(0%) belonged to illiterate. 1(3.33%) belonged to government employment, 3(10%) of them belonged to private employment 2(6.67%) belonged to coli worker 2(6.67%) belonged to business, 0(0%) belonged to abroad and 22(73.33%) of them belonged to home maker. Based on the occupation of the mother 1(3.33%) belonged to government employment, 3(10%) of them belonged to private employment 2(6.67%) belonged to coli worker 2(6.67%) belonged to business, 0(0%) belonged to abroad and 22(73.33%) of them belonged to home maker. Based on the occupation of the father 1(3.33%) belonged to government employment, 5(16.67%) of them belonged to private employment 14(46.67%) belonged to coli worker 9(30%) belonged to business, 1(3.33%) belonged to abroad and 0(0%) of them belonged to home maker.

- In study group 2(6.67%) had inadequate level of knowledge, 18(60%) had moderate level of knowledge, and 10(33.33%) had adequate level of knowledge. In Control group, 7(23.33%) had inadequate level of knowledge, 20 (66.67%) had moderate level of knowledge and 3(10%) had adequate level of knowledge.
- In Study group 5(16.67%) had no utilization, 22(73.33%) had partial utilization, and 3(10%) had full utilization. In Control group, 3(10%) had no utilization, 27(90%) had partial utilization and 0(0%) had full utilization.
- The mean score on level of knowledge in mothers in Study group was 12.5 in pre test and 15.2 in post test. The paired„t‟ value was 10.45***** which is significant at $p < 0.05$. It shows that IEC package was effective in increasing the level of knowledge and utilization. Hence the research hypothesis (H_1) is accepted. In Control group the mean score on level of knowledge in mothers was 9.23 in pre test and 9.47 in post test. The paired„t‟ value was 4.4***** which is not significant at $p < 0.05$.

- The mean score on level of knowledge among mothers who have under five children in Study group was 15.27 in post test and 9.47 in Control group post test. The estimated„t‟ value was 8.67* which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the knowledge. Hence the research hypothesis (H_2) is accepted.
- The mean score on level of utilization among mothers who have under five children in Study group was 50.13 in post test and 43.47 in Control group post test. The estimated„t‟ value was 2.47* which is significant at $p < 0.05$. It shows that IEC package is effective in increasing the utilization. Hence the research hypothesis (H_2) is accepted.
- The correlation between the knowledge and utilization in the study group, in pre test 0.508, in post test 0.416 and in the control group, in pre test -0.023 and in post test 0.026. Hence research hypothesis H_3 is accepted.
- There was no significant association between the post test level of knowledge among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, family income per month, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level.
- There was no significant association between the post test level of utilization among mothers who have under five children in study and control group with their demographic variables such as age of the mother, age of the child, gender of the child, birth order of the child, type of the family, educational status of the mother, educational status of the father, occupation of the mother and educational status of the father at $p<0.05$ level. In the study group there is significant association between the utilization level in the post test and family income per month. Hence research hypothesis H_4 is not accepted.

CONCLUSION

From the result of the study, it was concluded that most of the mothers who have under five children have moderate level of knowledge and utilization on ICDS services. There was remarkable increase in the level of knowledge

and utilization on ICDS services after the provision IEC package. Therefore the investigator felt that, more importance should be given on creating awareness about the ICDS services among mothers who have under five children.

IMPLICATIONS

The researcher has derived the following implications from the study results which are of vital concerned to the field of nursing service, nursing administration, nursing education and research.

Implication for nursing practice

Nurses should develop in depth knowledge about the growth and development of children and the nutritional requirement for them. They should be knowledgeable regarding the services provided in the anganwadi centre under ICDS services and understand the need of IEC package on them. Nurses should promote and encourage the use of the available services for children especially through the ICDS services.

Implication for nursing education

Nurse educators need to be equipped with adequate knowledge regarding ICDS services. Nursing students should receive adequate training in the anganwadi centre. Conduct workshops or conferences for students regarding the benefits of ICDS services. Strengthen the curriculum for nurses to excel them in knowledge and skill in areas of various community practices.

Implication for nursing administration

Nurse should assist in implementing public health awareness campaigns aimed at creating awareness regarding the various schemes and programmes under the ministry of health and family welfare. Nurses should provide knowledge, resources and leadership for establishing public health policies that focus on IEC activities among mothers who have under five children. Public information programs should be designed by nurses to encourage mothers for the better utilization.

Implication for nursing research

Nursing research is to be done to find out the various innovative methods to create awareness regarding the ICDS services. The finding of the study would help to expand the scientific body of professional knowledge upon which their research can be conducted. Large scale study should be conducted on IEC package on ICDS services. The researchers are requested to disseminate the finding of research through conferences, seminars and nursing journals.

LIMITATIONS

- Since there were very few studies done on the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers who have under five children, the investigator had a lot of difficulty in collecting the study materials for the review.
- The study was limited to four weeks period which is too short to assess the utilization effectively.

RECOMMENDATIONS

The following studies can be undertaken to strengthen IEC package to increase the awareness of mothers who have under five children on ICDS services.

- A similar study can be conducted with large sample.
- A similar study can be conducted by including all beneficiaries such as antenatal mothers, postnatal mothers and adolescent girls.

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ANNEXURES - I

St. XAVIER'S CATHOLIC COLLEGE OF NURSING

Chunkankadai, Nagercoil,
Kanyakumari District,
Tamil Nadu - 629 003.

Tel : College : 04651 - 231740
Cell : 9840307884
Fax : 04651 - 230914
E-mail : xaviers_nursing@yahoo.com
reenaevancy@yahoo.com
Website : www.xaviersnsg.edu.in

Dr. A. REENA EVENCY, M.Sc. (N)., Ph.D.,
Principal

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

06.05.2013

To,

The Panchayat president,

Villukuri panchayat,

Kanyakumari district,

Tamil Nadu.

Respected madam/sir,

Mrs. Virgin Flower is a student of M.Sc., Nursing programme in our college from community health nursing department. She is conducting a study on **"An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakummari district."**

This is for the research project to be submitted to the Tamilnadu Dr. M.G.R Medical University in partial fulfilment of university requirement for the award of M.Sc., Nursing degree and will be beneficial in understanding and improving the knowledge and utilization of ICDS services among mothers who have under five children.

As part of her study she needs to observe the mothers who have under five children and effectiveness of IEC package on ICDS services in improving the knowledge and utilization of ICDS services among mothers. So permission may kindly be granted for her to conduct the study in your area. She will abide by the rules and regulations of the area.

Thanking you,

Yours faithfully,

PRINCIPAL
ST.XAVIER'S CATHOLIC COLLEGE OF NURSING
CHUNKANKADAI
NAGERCOIL - 629 003
K. K. DIST.

St. XAVIER'S CATHOLIC COLLEGE OF NURSING

Chunkankadai, Nagercoil,
Kanyakumari District,
Tamil Nadu - 629 003.

Tel : College : 04651 - 231740
Cell : 9840307884
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reenaevancy@yahoo.com
Website : www.xaviersnsg.edu.in

Dr. A. REENA EVENCY, M.Sc. (N)., Ph.D.,
Principal

LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

06.05.2013

To,

The Panchayat president,

Nullivilai panchayat,

Kanyakumari district,

Tamil Nadu.

Respected madam/sir,

Mrs. Virgin Flower is a student of M.Sc., Nursing programme in our college from community health nursing department. She is conducting a study on **"An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakummari district."**

This is for the research project to be submitted to the Tamilnadu Dr. M.G.R Medical University in partial fulfilment of university requirement for the award of M.Sc., Nursing degree and will be beneficial in understanding and improving the knowledge and utilization of ICDS services among mothers who have under five children.

As part of her study she needs to observe the mothers who have under five children and effectiveness of IEC package on ICDS services in improving the knowledge and utilization of ICDS services among mothers. So permission may kindly be granted for her to conduct the study in your area. She will abide by the rules and regulations of the area.

Thanking you,

Yours faithfully,

PRINCIPAL
ST. XAVIER'S CATHOLIC COLLEGE OF NURSING
CHUNKANKADAI
NAGERCOIL - 629 003
K. K. DIST.

ANNEXURES - II

A. விஷ்ணு M.A., B.Ed.,
தலைவர்
வில்லுக்குறி பேரூராட்சி
கன்னியாகுமரி மாவட்டம்

வீடு : பரசேரி
சுங்கான்கடை - 629 807.
Ph : 04651-258106
Cell : 9443141666

தேதி: 5/8/2013

வெர்ஜினி மினவர் D/o T. அந்தோணி ஜோசப் எண் 145 இவர் எங்கள் பேரூராட்சியில் வசித்து வருகின்றார்கள். இவர் தூய்மை St. Xaviers Catholic College of Nursing-ல் 1st year படித்து வருகின்றார். இவர் விவசாயம் தொடர்பாக "அங்கக வேளாண்மை" என்ற project செய்வதற்கு அனுமதி வழங்கலாம்.

தலைவர்
வில்லுக்குறி பேரூராட்சி மன்றம்
கன்னியாகுமரி மாவட்டம்

N. கோசலை சாந்தகுமார்

தலைவர், நுள்ளிவிளை முதல்நிலை ஊராட்சி
பேயன்குழி & அஞ்சல் – 629 809.
செல் : 9486550229, 9715294158

அலுவலகம் :
கண்டன்விளை,
கண்டன்விளை அஞ்சல்.
போன் : 223005

தலைவர் அலுவலகம் நுள்ளிவிளை ஊராட்சி
கண்டன்விளை
Pin: 629 810
கன்னியாகுமரி மாவட்டம்

தேதி : 17/06/2013

சான்று

இவ்வலுவலகம் வரம்புக்குட்பட்ட விவசாயி பெயரைக்கொண்ட மட்ட
4. வெங்கின்ஸ்லைவர் ப/o. ர. புஷ்பராஜ், கதவு எண் 1/45
பரஞ்சிலா தெரு மாடத்துவிளை, விரும்பும் அரசுப்
பள்ளியில், பிரிவு கோரி விண்ணப்பித்துள்ளார். மேற்படி மாணவர்
5. வயது சான்றிதழ் பெறுவதற்கு தேவையான ஆவணங்களை
அவரின் கை வசமுள்ளதாகவும் அதன் அடிப்படையில் இவர்
அந்த பயன்பாட்டையும் இவர் அளித்த அறிவிப்பு
அவரது சாதியினர் என்பதை இந்த சான்று

N. கோசலை
தலைவர்
முதல் நிலை
நுள்ளிவிளை ஊராட்சி

ANNEXURE-III

LETTER SEEKING EXPERTS OPINION FOR THE VALIDITY OF THE TOOL

From,

Mrs. Virgin flower,
M.Sc. Nursing II year,
St. Xavier's Catholic college Of Nursing, Chunkankadai.

To,

Respected Sir/ Madam,

Sub: Requisition to expert opinion and suggestion for the content validity.

I Mrs. Virgin Flower, II year M.Sc. Nursing student of St. Xavier's Catholic College Of Nursing, Chunkankadai, have selected the following topic, "An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakumari district" for my dissertation to be submitted to Tamilnadu Dr.M.G.R. Medical University in the partial fulfillment of the requirement for award of Master of science in Nursing.

I request you to go through the items and give your valuable suggestions and opinions to develop the content validity of the tool. Kindly suggest modifications, addition and deletions if any in the remarks column.

Thanking You,

Place: Chunkankadai. Yours sincerely,
Date: Mrs. Virgin Flower.

ENCLOSURE:

1. Problem statement, objectives, and hypothesis of the study.
2. Demographic profile.
3. questioner on knowledge of ICDS.
4. Checklist on Utilization status.
5. Evaluation Performa.

ANNEXURE-IV

EVALUATION CRITERIA CHECKLIST FOR VALIDATION

INSTRUCTIONS:

The expert is requested to go through the following criteria for evaluation. Three columns are given for responses and a column for remarks. Kindly please tick mark (✓) in the appropriate columns and give remarks. Interpretation column:

Column I – meets the criteria.

Column II - Partially meets the criteria.

Column III – does not meet the criteria.

S. NO	CRITERIA	1	2	3	REMARKS
1.	Scoring - adequacy. - clarity. - simplicity.				
2.	Content - logical sequence. - adequacy. - relevance.				
3.	Language - Appropriate. - clarity. - simplicity.				
4.	Practicability - easy to score. - precise. - utility.				

Signature: Any other suggestion:

Name:

Designation:

Address:

CRITERIA CHECKLIST FOR VALIDATION OF THE TOOL

INSTRUCTIONS:

Kindly give your suggestions regarding the accuracy, relevance and appropriateness of the content. Kindly put (✓) against specific columns.

Validation of demographic variables.

Item	**Very relevant**	**Relevant**	**Need for modification**	**Not relevant**	**Remarks**
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

VALIDATION OF QUESTIONER ON KNOWLEDGE OF ICDS SCORING.

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

VALIDATION OF RATING SCALE ON UTILIZATION STATUS SCORING.

Item	Very relevant	Relevant	Need for modification	Not relevant	Remarks
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					

ANNEXURE-V

LIST OF EXPERTS VALIDATED THE TOOL

1. Dr.D.Pethuru M.B.B.S,. M.D(Community Medicine).
   Assistant professor,
   Mookambiga Medical College and Hospital,
   Kulaseharam,
   Nagercoil – 629001.

2. Dr.blessed,M.B.B.S., M.D(Community Medicine),
   Professor,
   C. S. I. Medical College,
   Karakonam,
   Trivandrum.

3. Dr. Judie, M.Sc.(N) P.hd (N),
   Principal,
   Madras Medical Mission College of Nursing,
   Chennai.

4. Mrs. S.Margrete Ranjitham, M.Sc.(N),
   Principal,
   Nehru College of Nursing,
   Vallioor.

5. Mrs.G. Feby, M.Sc., (N)
   Vice principal,
   Thasiah College of Nursing,
   Marthandam

ANNEXURE-VI

INFORMED CONSENT

I am _____ from _____ Panchayat. Since I have under five Child, I am willing to participate in the study to evaluate the effectiveness of IEC package on ICDS services without any compulsion. I came to know through the researcher, that the information will be helpful for me and for my child.

Yours Sincerely,

ANNEXURE- VII

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

It is certified that the dissertation paper titled **"An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakummari district." by Ms. Virgin Flower**, has been checked for the accuracy and correctness of English language usage and that the language used in the tool is lucid, unambiguous, free of grammatical or spelling errors and apt for the purpose .

P. Dhasan M.A; M.Ed
(Rtd Teacher)

Signature

ANNEXURE- VII

CERTIFICATE OF EDITING

TO WHOMSOEVER IT MAY CONCERN

It is certified that the dissertation paper titled **"An experimental study to evaluate the effectiveness of IEC package on knowledge and utilization of ICDS services among mothers in selected village, Kanyakummari district." by Mrs. Virgin Flower**, has been checked for the accuracy and correctness of Tamil language usage and that the language used in the tool is lucid, unambiguous, free of grammatical or spelling errors and apt for the purpose .

Signature

S. Mary Fabiola. M.A. தமிழ்
Sec. Gr. Teacher.
Govt. P. School. (L.M.A)
Villukuri.

ANNEXURE - VIII

CERTIFICATE OF STATISTICAL ANALYSIS

TO WHOMSOEVER IT MAY CONCERN

Certified that the dissertation paper titled **"An experimental study to assess the knowledge and utilization of ICDS services and evaluate the effectiveness of IEC package on ICDS services among mothers in selected village, Kanyakummari district." by Mrs. Virgin Flower**, has been checked for the accuracy in statistical analysis and interpretation and was apt for the purpose.

Signature

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ANNEXURE – IX

கணக்கெடுப்பு புடிவம் எண் :

கிராமம் :

ஊராட்சி :

வுரிசை எண்	தாயின் பெயர்	தாயின் வயது	குழந்தையின் பெயர்	குழந்தையின் வயது	குழந்தைகளின் எண்ணிக்கை	முகவரி

தனிநபர் விபரம் (பகுதி – 1)

பிரிவு – 1

1. தாயின் பெயர் : ----------

2. குழந்தையின் பெயர் : ----------

3. முகவரி : ----------

---

4. அங்கன்வாடி மையம் அமைந்திருக்கும் பகுதி : ----------

-

5. அங்கன்வாடி பணியாளரின் பெயர்: ----------

பிரிவு – 2 தனிநபர் விபரம்

1. தாயின் வயது ----------

   அ) 21-25 வயது வரை

   ஆ) 26-30 வயது வரை

   இ) 31-35 வயது வரை

2. குழந்தையின் வயது ----------

   அ) 2-3 வயது வரை

   ஆ) 4-5 வயது வரை

3. குழந்தையின் பாலினம் ----------

   அ) ஆண்

   ஆ) பெண்

4. குழந்தையின் பிறப்பு வரிசை ----------

   அ) 1

   ஆ) 2

   இ) 3 மற்றும் அதற்கு மேல்.

5. குடும்பத்தின் வகை ----------

   அ) தனிக்குடும்பம்

   ஆ) கூட்டுக்குடும்பம்

6. குடும்பத்தின் மாத வருமானம்----------

   அ) ரூ. 5000 க்கும் கீழ்.

   ஆ) ரூ. 5000 – 10000 வரை.

   இ) ரூ. 10000 க்கும் மேல்.

7. தாயின் கல்வித் தகுதி----------

அ) தொழில் சார்ந்த பட்டம் / முதுகலை பட்டம்

ஆ) பட்டப் படிப்பு / டிப்ளோமா கல்வி

இ) மேல்நிலை கல்வி

ஈ) உயர்நிலைக் கல்வி

உ) நடுநிலைக் கல்வி

ஊ) ஆரம்பக் கல்வி

எ) படிப்பறிவு இல்லாதவர்

8. தந்தையின் கல்வித் தகுதி----------

அ) தொழில் சார்ந்த பட்டம் / முதுகலை பட்டம்

ஆ) பட்டப் படிப்பு / டிப்ளோமா கல்வி

இ) மேல்நிலைக் கல்வி

ஈ) உயர்நிலைக் கல்வி

உ) நடுநிலைக் கல்வி

ஊ) ஆரம்பக் கல்வி

எ) படிப்பறிவு இல்லாதவர்

9. தாயின் தொழில்----------

அ) அரசு வேலை.

ஆ) தனியார் வேலை.

இ) கூலி வேலை.

ஈ) சுய தொழில்.

உ) வெளிநாட்டில் வேலை.

ஊ) இல்லத்தரசி

10. தந்தையின் தொழில் ----------

அ) அரசு வேலை.

ஆ) தனியார் வேலை.

இ) கூலி வேலை.

ஈ) சுய தொழில்.

உ) வெளிநாட்டில் வேலை.

ஊ) வேலை இல்லை

பகுதி – 2 (பிரிவு – 1)

(ஒருங்கிணைந்த குழந்தை வளர்ப்பு திட்டப் பணிகள் பற்றிய அறிவை பரிசோதிக்கும் கேள்வித் தொகுப்பு. சரியான விடையை தேர்ந்தெடுக்கவும்)

1. அங்கன்வாடி மையத்தின் நோக்கம் ----------
   அ) குழந்தைகளின் ஊட்டச்சத்து மற்றும் உடல் நலத்தை அதிகரித்தல்.
   ஆ) குழந்தைகளுக்கு அவசர சிகிட்சை கொடுத்தல்
   இ) கணக்கெடுத்தல்.
   ஈ) சுற்றுப்புற சுகாதாரத்தை பேணுதல்.

2. பின்வருவனவற்றுள் எதில் அதிக கவனம் செலுத்த ஒரு தாயின் ஆற்றலை ஓர் அங்கன்வாடி பணியாளர் ஊக்கப்படுத்த வேண்டும்
   அ) குழந்தையின் உடல்நலம் மற்றும் ஊட்டச்சத்து தேவைகளை பேணும்
   ஆ) குழந்தையின் கலைத் தேவைகளை நேக்கும்.
   இ) குடும்ப வருமானத்தை மேம்படுத்தும்.
   ஈ) குழற்தையின் பொழுதுபோக்கு தேவைகளை நோக்கும்.

3. அங்கன்வாடி மையத்தில்----------கொடுக்கப்படுகிறது
   அ) இணை உணவு.
   ஆ) சமையலுக்கு தேவையான பொருட்கள்.
   இ) ஆரோக்கியத்தை மேம்படுத்துவதற்கான நிதி.
   ஈ) குடும்ப கட்டுப்பாடு பணிகள்.

4. ஆங்கன்வாடி மையத்தில்----------ன் வளர்ச்சியை கண்காணிக்கிறார்கள்
   அ) குழந்தைகள்
   ஆ) முத்யவர்கள்
   இ) பெரியவர்கள்
   ஈ) இளைஞர்கள்

5. இல் குழந்தைகளுக்கான பள்ளி முன்பருவ கல்வி கொடுக்கப்படுகிறது
   அ) அங்கன்வாடி மையத்தில்
   ஆ) சுகாதார துணை நிலையம்
   இ) ஆரம்ப சுகாதார நிலையம்
   ஈ) சமுதாய சுகாதார நிலையம்

6. அங்கன்வாடி மையத்தில் மருத்துவ ஆலோசனை வளங்குபவர்
   அ) கிராம நலச் செவிலியர் / மருத்துவ அதிகாரி
   ஆ) செவிலியர் / மருத்துவ அதிகாரி
   இ) சிறப்பு மருத்துவர்
   ஈ) துறை சுகாதார செவிலியர்

7. அங்கன்வாடி மையத்தில் கொடுக்கப்படுகிறது
   அ) குடும்பக்கட்டுப்பாட்டுப் பணிகள்
   ஆ) சுற்றுப்புற சூழலை மேம்படுத்தும் பணிகள்
   இ) மேல் மருத்துவ ஆலோசனைக்கு அனுப்பும் பணிகள்
   ஈ) அவசர சிகிட்சை

8. ஒரு குழந்தைக்கு ஒரு நாளைக்கு --- கிராம் இணை உணவு கொடுக்கப்படுகிறது.
   அ) 130 கிராம்
   ஆ) 200 கிராம்
   இ) 250 கிராம்
   ஈ) 50 கிராம்

9. கற்பிணிகளுக்கு ஒரு நாளைக்கு---------- கிராம் இணை உணவு கொடுக்கப்படுகிறது.
   அ) 160 கிராம்.
   ஆ) 200 கிராம்.
   இ) 250 கிராம்.
   ஈ) 300 கிராம்.

10. இரண்டு முதல் ஆறு வயது வரை உள்ள குழந்தைகளுக்கு ஒரு வாரத்திற்கு - முட்டைகள் கொடுக்கப்படுகிறது.
   அ) 4
   ஆ) 3
   இ) 5
   ஈ) 1

11 ---------- வயது வரை உள்ள குழந்தைகளுக்கு ஒரு வாரத்திற்கு ஒரு முட்டை
கொடுக்கப்படுகிறது.
   அ) ஒரு வயது முதல் 2 வயது வரை
   ஆ) 2 – 3
   இ) 3 – 4
   ஈ) 4 – 5

12. 2 வயது முதல் ஆறு வயது வரை உள்ள குழந்தைகளுக்கு முட்டை கொடுக்கப்படும் நாட்கள்
   அ) திங்கள், புதன் , வியாழன்
   ஆ) திங்கள், செவ்வாய், புதன்
   இ) செவ்வாய், புதன், வியாழன்
   ஈ) செவ்வாய், புதன், வெள்ளி

13. முட்டை சாப்பிடாத குழந்தைகளுக்கு---------- கொடுக்கப்படுவது
   அ) வாழை பழம்
   ஆ) 50 கிராம் பருப்பு
   இ) மாம்பழம்
   ஈ) கொய்யா பழம்

14. தாய்மார்களுக்கு ஆலோசனை வழங்க ---------- அவர்கள் வீட்டை சந்திக்கிறார்கள்
    அ) அங்கன்வாடி பணியாளர்கள்
    ஆ) ஆசிரியர்கள்
    இ) மருத்துவர்
    ஈ) செவிலியர்

15. அங்கன்வாடி மையத்தில் குழந்தைகளுக்கு ஒவ்வொரு ---------- ஒரு முறை உயிர்ச்சத்து - ய கொடுக்கப்படுகிறது
    அ) 6 மாதம்
    ஆ) 1 வருடம்
    இ) 3 மாதம்
    ஈ) 4 மாதம்

16. அங்கன்வாடி மையத்தில் மருத்துவர் பணியில் இருக்கும் நாள்
    அ) திங்கள்
    ஆ) செவ்வாய்
    இ) வியாழன்
    ஈ) வெள்ளி

17. அங்கன்வாடி மையத்தில் தடுப்பூசி ----------கொடுக்கப்படுகிறது.
    அ) குழந்தைகளும் கற்பிணிகளுக்கும்
    ஆ) குழந்தைகளும் வயது முதிற்ந்தவர்தளுக்கும்
    இ) கர்பிணிகளுக்கும் பெரியவர்குளுக்கும்
    ஈ) கற்பிணிகளுக்கும் வயது முதிற்ந்தவர்களுக்கும்

18. அங்கன்வாடி மையத்தில் கொடுக்கப்படும் மருத்துவ சிகிட்சைகள்
    அ) சிறிய உபாதைகள்
    ஆ) அவசர சிகிட்சை
    இ) அறுவை சிகிட்சை
    ஈ) குடும்ப கட்டுப்பாடு சிகிட்சை

19. அங்கன்வாடி மையத்தில் குழந்தைகளின் ----------பரிசோதிக்கப்படுகிறது
    அ) உயரம்
    ஆ) எடை
    இ) தோல் மடிப்பு தடிமன்
    ஈ) கை சுற்றளவு

20. பாலூட்டும் தாய்மார்களுக்கு இணை உணவு ----------மாதம் வரை கொடுக்கப்படுகிறது
    அ) 6
    ஆ) 10
    இ) 12
    ஈ) 18

The knowledge status was scored as follows

Each correct answer carries one mark and the wrong answer caries 0 mark.

The score was interpreted as follows.

i. 1-10 : inadequate level of knowledge,

ii. 11-15: moderate level of knowledge

iii. 16-20: adequate level of knowledge

பிரிவு – 2 (அங்கன்வாடி மையத்தின் சலுகைகளில் உங்கள் பயன்பாட்டை குறிக்கும் சில வாக்கியங்கள்
இங்கே தரப்பட்டுள்ளது. இந்த வாக்கியங்கள் உங்களுக்கு எந்த அளவிற்கு பொருந்துகின்றன என்பதை ஒவ்வொரு வாக்கியத்தின் எதிரில் கொடுக்கப்பட்டுள்ள கட்டத்தில் (□) செய்யவும்.)

வரிசை எண்	கேள்வி	ஏப்பொழுதும்	ஆழக்கடி	ஏப்பொழுதாவது	ஒருபோதும் இல்லை
1	அங்கன்வாடி மையத்தில் மாதம்தோறும் உங்கள் குழந்தையின் எடையை பரிசோதிக்கிறிர்களா?				
2	அங்கன்வாடி மையத்தில் உங்கள் குழந்தையின் வளர்ச்சி கண்காணிக்கப்படுகிறதா?				
3	தாய் சேய் நல இணை அட்டையில் உங்கள் குழந்தையின் வளர்ச்சி மைல்கல் குறிக்கப்படுகிறதா?				
4	ஊங்கள் குழந்தைக்கு அங்கன்வாடி மையத்தில் தடுப்பூசி கொடுக்கிறீர்களா?				
5	நோய்த்தடுப்பு அட்டவணை தொடர்பான சுகாதார போதனை உங்களுக்கு வழங்கப்பட்டதா?				
6	நீங்கள் உங்கள் குழந்தைக்கு அங்கன்வாடி மையத்தில் இருந்து தொடர்ச்சியாக பரிந்துரைக்கப்பட்ட அளவு இணை உணவு பெற்றுக்கொள்கிறிர்களா?				

7	நீங்கள் அங்கன்வாடி மையத்தில் காய்ச்சலுக்கு சிகிட்சை பெறுவதுண்டா?				
8	நீங்கள் உங்கள் குழந்தைக்கு தினமும் வழக்கமான உணவுடன் இணை உணவு சேர்பதுண்டா?				
9	நீங்கள் உங்கள் குழந்தைக்கு வரும் சிறு சிறு உபாதைகளுக்கு அங்கன்வாடி மையத்தில் சிகிட்சை பெறுவதுண்டா?				
10	நீங்கள் அங்கன்வாடி மையத்தை அணுகும்போது சரியான மேல் மருத்துவ சிகிட்சைக்கு அனுப்பப்படுகிறிர்களா?				
11	ஊங்கள் குழந்தையை பள்ளி முன்பருவ கல்விக்காக அங்கன்வாடி மையத்திற்கு அனுப்புவதுண்டா?				
12	நீங்கள் அங்கன்வாடி பண்யாளருடன் நல்லுறவை கடைபிடிக்கிறிர்களா?				
13	உங்கள் குழந்தைகளுக்கு வருடத்திற்கு இருமுறை போலியோ சொட்டு மருந்து கொடுக்கிறிர்களா?				
14	உங்கள் குழந்தை அங்கன்வாடி மையத்தில் மதிய உணவு உண்கிறதா?				
15	ஆங்கன்வாடி பணியாளர் உங்கள் வீட்டை சந்திப்பதுண்டா?				
16	ஆங்கன்வாடி மையத்தில் நடைபெறும் தொடர்பு குழுக் கூட்டத்திற்கு செல்கிறீர்களா?				
17	சுகாதாரம் மற்றும் ஊட்டச்சத்து பற்றிய போதனை உங்களுக்கு வழங்கப்படுகிறதா?				
18	ஓவ்வொரு ஆறு மாதத்திற்கு ஒருமுறை உயிர்சத்து A அங்கன்வாடி மையத்தில் பெற்றுக்கொள்கிறீர்களா?				
19	உங்கள் குழந்தைக்கு வயிற்றுப்போக்கு வரும்போது அங்கன்வாடி மையத்திலிருந்து உப்பு கரைசல் பெற்றுக் கொள்கிறிர்களா?				
20	வுயிற்றில் புளுதொற்று இருக்கும் பொழுது அங்கன்வாடி மையத்தில் இருந்து சிகிட்சை பெற்றுக்கொள்கிறிர்களா?				

The utilization status was scored as follows:

Always	: 4 marks
Frequently	: 3 marks
Occasionally	: 2 marks
Seldom	: 1 mark

The score was interpreted as follows:

i. 1-31 : no utilization

ii. 32-59 : partial utilization

iii. 60-80 : full utilization.

ANNEXURES - X

ஒருங்கிணைந்த குழந்தை வளர்ச்சி திட்டம்
குறித்த

கையேடு

திருமதி. வெர்ஜின் ப்ளவர்
2ஆம் ஆண்டு செவிலியர்
முதுகலை பட்டம்

- அண்மை காலத்தில் பெண்கள் மற்றும் குழந்தைகள் மேம்பாட்டு அமைச்சகம் மேற்கொண்ட ICDS I உலகமயமாக்குதல் என்னும் முக்கிய கொள்கை முயற்சியை செயல்படுத்துதல்

ஒருங்கிணைந்த குழந்தை வளர்ப்பு திட்டம்.

உலகின் மிகப்பெரிய தனித்தன்மை வாய்ந்த இத்திட்டம் 1975 ஆம் ஆண்டு அக்டோபர் மாதம் 2-ம் தேதி ஆரம்பிக்கப்பட்டது. இதன் முதன்மையான நோக்கம் குழந்தைபருவத்தின் ஆரம்பக்கட்ட வழர்ச்சியை மேம்படுத்துவதாகும்.

நோக்கம்

- 0-6 வயது வரை உள்ள குழந்தைகளின் ஆரோக்கியம் மற்றும் ஊட்டச்சத்து நிலையை மேம்படுத்துதல்
- குழந்தையின் உடல் மனம் மற்றும் சமுதாய வளர்ச்சிக்கு அடித்தளம் அமைத்தல்
- இறப்பு நோய் ஊட்டச்சத்தின்மை மற்றும் பள்ளி இடைநிற்றல் ஆகியவற்றின் நிகழ்வை குறைத்தல்.
- குழந்தை மேம்பாட்டிற்காக பல்வேறு துறைகள் மத்தியில் கொள்கை மற்றும் செய்முறைப்படுத்துதலில் சிறப்பான ஒருங்கிணைப்பை சாதித்தல்
- சுரியான ஊட்டச்சத்து மற்றும் சுகாதார கல்விமூலம் குழந்தையின் ஆரோக்கியம் மற்றும் ஊட்டச்சத்து தேவைகளை பூர்த்தி செய்யும் திறனை தாய்க்கு அதிகரித்தல்

ஒருங்கிணைந்த குழந்தை வளர்ச்சி திட்டத்தின் விரிவாக்கம்

1. <u>முதல்கட்ட விரிவாக்கம்</u>

   உச்ச நீதிமன்ற உத்தரவிற்கு இணங்க திருத்தப்பட்ட வித்முறைகளின் படி

   - சமதளங்களில் 500-முதல் 1500 மக்கட் தொகைக்கு ஒரு அங்கன்வாடி.
   - புழங்குடியினர் பகுதிகளில் 300 – 1500 மக்கட் தொகைக்கு ஒரு அங்கன்வாடி அமைக்க திட்டமிட்ப்பட்டது.

2. <u>இரண்டாம்கட்ட விரிவாக்கம்</u>

   பெண்கள் மற்றும் குழந்தைகள் மேம்பாட்டு அமைச்சகத்தின் வேண்டுகோளுக்கிணைங்க இத்திட்டத்தை உலகமயமாக்கும் பணிகள் தொடங்கப்பட்டன.
   அதன்படி இந்திய அரசாங்கம் 2007 இல் தமிழ் நாட்டில் 1539 முக்கிய அங்கன்வாடி மையங்களையும் தொடங்க அனுமதி அளித்தது.

3. <u>மூன்றாம் கட்ட விரிவாக்கம்</u>

உலகமயமாக்குதலை உறுதி செய்யும் பொருட்டு உச்ச நீதிமன்ற உத்தரவிற்கு இணங்க

- 400 – 800 மக்கட்தொகைக்கு ஒரு அங்கன்வாடி மையமும் 801 – 1600 பேர்க்கு இரண்டு அங்கன்வாடி மையங்களும் சமதளங்களிலும்
- ஒவ்வொரு 300 – முதல் 800 வரை உள்ள மக்கட் தொகைக்கு ஒரு அங்கன்வாடி மையம் பழங்குடியினர் பகுதியிலும் அமைக்கப்பட திட்டமிடப்பட்டது

திட்டப்பணிகள்

சமுதாயத்தில் எல்லோருக்கும் ஆரோக்கியமான நல வாழ்வு அவசியம். குறிப்பாக தாய்மார்கள் மற்றும் குழந்தைகள் நல்வாழ்வைப் பொறுத்தவரை மிகவும் கவனத்துக்குரியவர்கள் என்று கருதப்படுகிறார்கள். குழந்தைகளின் வளர்ச்சி மற்றும் கர்பகாலத்தில் தாயின் வயிற்றில் இருக்கும் கருவின் வளர்ச்சிக்கு அதிக ஊட்டச்சத்துக்களும் உடல் கவனிப்பும் அவசியம். எனவேதான் தாய் சேய் நலத்திற்கு முக்கியத்துவம் அளிக்கப்பட்டுள்ளது.

திட்டத்தில் பயனடைவோர் - முதல் பிரிவு

(கற்ப்பிணிகள் பாலூட்டும் தாய்மார்கள் மற்றும் ஒரு மாதத்திற்குக் குறைவான சிசுக்கள்)

1. 6-ம் மாதத்திற்குள் அனைத்து கர்ப்பிணிகளையும் பதிவு செய்தல்
   - மைய அளவில் ஒரு பதிவேட்டில் குறித்து வைக்க வேண்டும்
2. பதிவு செய்யப்பட்ட அனைத்து கர்ப்பிணிகளுக்கும் குறைந்தது 5 முறையாவது கர்ப்பகாலப் பராமரிப்புப் பணிகளை அளிப்பது.
3. எடை எடுத்து எடை அதிகரிப்பைக் கண்காணிப்பது.
   - மாதாமாதம் எடை எடுத்து தாய்சேய் நல இணை அட்டையில் குறிக்க வேண்டும்
4. ஊட்டச்சத்துக் குறை நோய்களைத் தவிர்த்தல்.
   - இரும்புச் சத்து மற்றும் பாலிக் அமில மாத்திரைகள் வழங்குதல்.
   - தொடர்ந்து உட்கொள்ள வலியுறுத்துதல்.
5. பாதுகாப்பான பிரசவம்.
6. குடும்ப நலக் கல்வி.
   - திருமண வயதை அதிகரித்தல்.
   - 20 வயதுக்கு மேல் முதல் குழந்தை பெறுதல்.
   - சிறு குடும்பத்தின் அவசியம்.
7. பிரசவத்திற்குப்பின் சிறு குழந்தைகள் பராமரிப்பு.

திட்டத்தில் பயனடைவோர் - இரண்டாம் பிரிவு

(மூன்று வயதுக்குட்பட்ட குழந்தைகள்)

1. வளர்ச்சியை கண்காணித்தல்
   - ஒவ்வொரு மாதமும் எடை எடுத்தல்.
   - தாய்சேய் நல இணை அட்டையில் குறிக்க வேண்டும்
2. இணை உணவு அளித்தல்
   - வருடத்திற்கு முன்னூறு நாட்கள் கொடுக்கப்படுகிறது.
   - வழங்கப்படும் உணவு

வயது	வழுங்கப்படும் உணவு
6 மாதம் - 1 வயது	இணை உணவு
1 – 2 வயது	இணை உணவு வாரத்திற்கு ஒரு முறை ஒரு அவித்த முட்டை

2 – 3 வயது	இணை உணவு மதிய உணவு வாரத்திற்கு மூன்று முறை அவித்த முட்டை (திங்கள் புதன் வெள்ளி) முட்டை சாப்பிடாத குழந்தைகளுக்கு வாழைபழம் வாரத்திற்கு ஒரு முறை 20 கிராம் சிறுபயறு (செவ்வாய்) வாரத்திற்கு ஒரு முறை 20 கிராம் அவித்த உருளை கிழங்கு (வெள்ளி)

- 100 கிராம் இணை உணவு 350 கலோரிகளையும் 8.5 கிராம் புரதத்தையும் கொடுக்கிறது.

பிரிவு	இணை உணவின் அளவு	ஒருவருக்கு ஒரு நாள் செலவு	புரதச்சத்து	சக்தி (கிலோ கலோரி)
குழந்தைகள்	130	ரூ - 4	11	455
கடுமையான ஊட்டசடசத்து குறைபாடுள்ள குழந்தைகள்	190	ரூ - 6	16	665
கர்பிணி தாய்மார்கள் மற்றும் பாலூட்டும் தாய்மார்கள்	160	ரூ - 5	13.5	560

உயிர்ச்சத்து - A கொடுத்தல்

- ஆறு மாதத்திலிருந்து 5 வயது வரை உள்ள குழந்தைகள்.
- ஆறு மாதத்திற்கு ஒரு முறை வழங்குதல்.

3. தடுப்பூசி
   - நாடு தழுவிய தடுப்பூசி திட்டத்தின் அடிப்படையில் ஆறு தடுப்பூசி முலம் தடுக்கக்கூடிய நேய்களுக்கு.
   - தோண்டையடைப்பான் கக்குவான் இருமல் போலியோ காசநோய் தட்டம்மை டெட்டெனஸ்
4. மருத்துவ பரிசோதனை
   - ஆரம்ப சுகாதர மைய பணியாளர்கள் மற்றும் அங்கன்வாடி பணியாளர்.
   - வுயிற்றுப்போக்கு சிகிட்சை
   - புளுதொற்று சிகிட்சை
   - ஏளிய மருந்து வினியோகம்

திட்டத்தில் பயனடைவோர் - மூன்றாம் பிரிவு

(36 முதல் 60 மாதக் குழந்தைகள்)

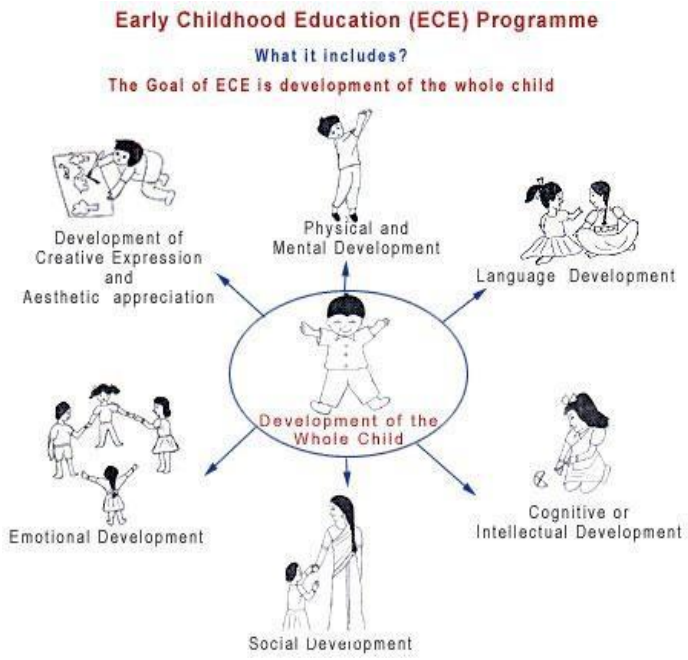
1. வளர்ச்சியை கண்காணித்தல்
   - மூன்று மாதத்திற்கு ஒரு முறை எடை எடுத்தல்.
   - தாய்சேய் நல இணை அட்டையில் குறிக்க வேண்டும்
2. இணை உணவு அளித்தல்
   - வருடத்திற்கு முன்னூறு நாட்கள் கொடுக்கப்படுகிறது.

வயது	வழுங்கப்படும் உணவு
3–5 வயது	இணை உணவு மதிய உணவு வாரத்திற்கு மூன்று முறை அவித்த முட்டை (திங்கள் புதன் வெள்ளி) முட்டை சாப்பிடாத குழந்தைகளுக்கு வாழைபழம் வாரத்திற்கு ஒரு முறை 20 கிராம் சிறுபயறு (செவ்வாய்) வாரத்திற்கு ஒரு முறை 20 கிராம் அவித்த உருளை கிழங்கு (வெள்ளி)

-100 கிராம் இணை உணவு 350 கலோரிகளையும் 8.5 கிராம் புரதத்தையும் கொடுக்கிறது.

பிரிவு	இணை உணவின் அளவு	ஒருவருக்கு ஒரு நாள் செலவு	புரதச்சத்து	சக்தி (கிலோ கலோரி)
குழந்தைகள்	130	ரூ - 4	11	455
கடுமையான ஊட்டசடசத்து குறைபாடுள்ள குழந்தைகள்	190	ரூ - 6	16	665
கர்பிணி தாய்மார்கள் மற்றும் பாலூட்டும் தாய்மார்கள்	160	ரூ - 5	13.5	560

3. உயிர்ச்சத்து - யு கொடுத்தல்
   - ஆறு மாதத்திலிருந்து 5 வயது வரை உள்ள குழந்தைகள்.
   - ஆறு மாதத்திற்கு ஒரு முறை வழங்குதல்.
4. மருத்துவ பரிசோதனை
   - ஆரம்ப சுகாதர மைய பணியாளர்கள் மற்றும் அங்கன்வாடி பணியாளர்.
   - வுயிற்றுப்போக்கு சிகிட்சை
   - புளுதொற்று சிகிட்சை
   - ஏளிய மருந்து வினியோகம்
5. பள்ளி முன்பருவக் கல்வி அளித்தல்
   - இத்திட்டத்தின் முதுகெலும்பு
   - மிகவும் மகிழ்ச்சிமிக்க விளையாட்டு வழி தினசரி செயல்பாடு



2 -3 Play Activities

Story telling for kids

Free drawing session in black board.

3 - 5 Play / Pre-School

Action song with uniforms (on par with private nursery schools)

Story telling

Blocks arrangements for mental development

பாடங்கள்

1. வருகை
2. இறைவணக்கம்
3. ஆரோக்கிய பரிசோதனை
4. சுதந்திர உரையாடல்
5. வெளி விளையாட்டு
6. கை கால் சுத்தமும் பழக்கவழக்கமும்
7. கதை சொல்லுதல்
8. பாடல்கள்
9. ஆக்க செயல்கள்
10. ஆயத்த செயல்கள்

திட்டத்தில் பயனடைவோரை

தகுதி உள்ள அனைவருக்கும்

வறுமைக்கோடு ஒரு

நிபந்தனை அல்ல

அங்கன்வாடி மையம்

ஒவ்வொரு 1000 மக்கட் தொகைக்கு ஒரு மையம் அமைக்கப்படுகிறது. இம்மையத்தில் 0 – 6 வயதுக் குழந்தைகளுக்கு முறையாக எடை எடுத்தல் ஊட்டச்சத்துப் பணிகள் சுகாதாரப் பணிகள் பள்ளி முன்பருவக்கல்வி ஆகிய பணிகள் அழிக்கப்படும்.

ஆங்கன்வாடி பணியாளர்

- இவர் ஒரு குழந்தைக்கு தாயானவர்
- எஸ். எஸ். எல். சி வரை படித்தவர்
- கிராமத்தோடு நெருங்கிய தொடர்பு கொண்டவர்
- மக்களுக்கு சேவை செய்யும் எண்ணம் கொண்டவர்
-

மருத்துவ அலுவலர் மற்றும் வட்டார ஊட்டச்சத்துத் திட்ட அலுவலர் ஊராட்சி ஒன்றிய ஆணையர் அடங்கிய குழுவினரால் பணியாளர்களுக்கு 50 நாட்களுக்கு பயிற்சி அழிக்கப்படுகிறது.

புனித சவேரியார் கத்தோலிக்க செவிலியர் கல்லூரி
சுங்கான்கடை

நன்றி

ANNEXURE XI

FORMULAS USED FOR DATA ANALYSIS

DESCRIPTIVE STATISTICS

Mean

$$\bar{x} = \frac{\Sigma x}{n}$$

Standard deviation

$$\sigma = \sqrt{\frac{\Sigma (x - \bar{x})^2}{n}}$$

INFERENTIAL STATISTICS

Independent 't' test

$$t = \frac{|\bar{x}_1 - \bar{x}_2|}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

$$\sqrt{\frac{(s_1^2)(s_2^2)}{}}$$

Paired 't' test

$$t = \frac{\bar{d}}{\sqrt{\frac{\Sigma (d - \bar{d})^2}{n(n-1)}}}$$

Chi-Square test

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Correlation co efficiency

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 \Sigma y^2}}$$

ANNEXURE- XII